

CAMPBELL MAKES THE RIGHT WINDOW FOR EVERY TYPE OF BUILDING



# CAMPBELL METAL WINDOWS

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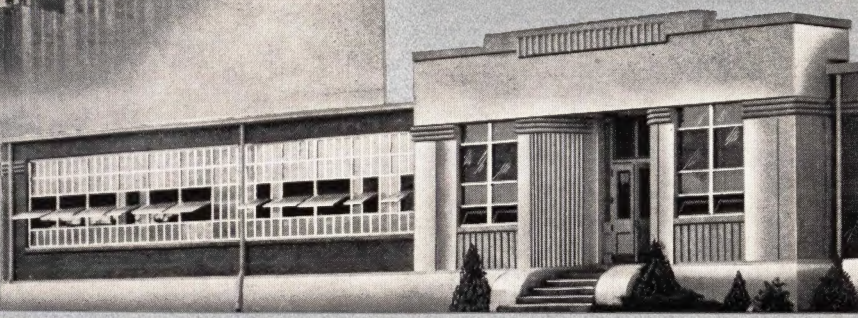
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## CAMPBELL METAL WINDOW CORP.

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

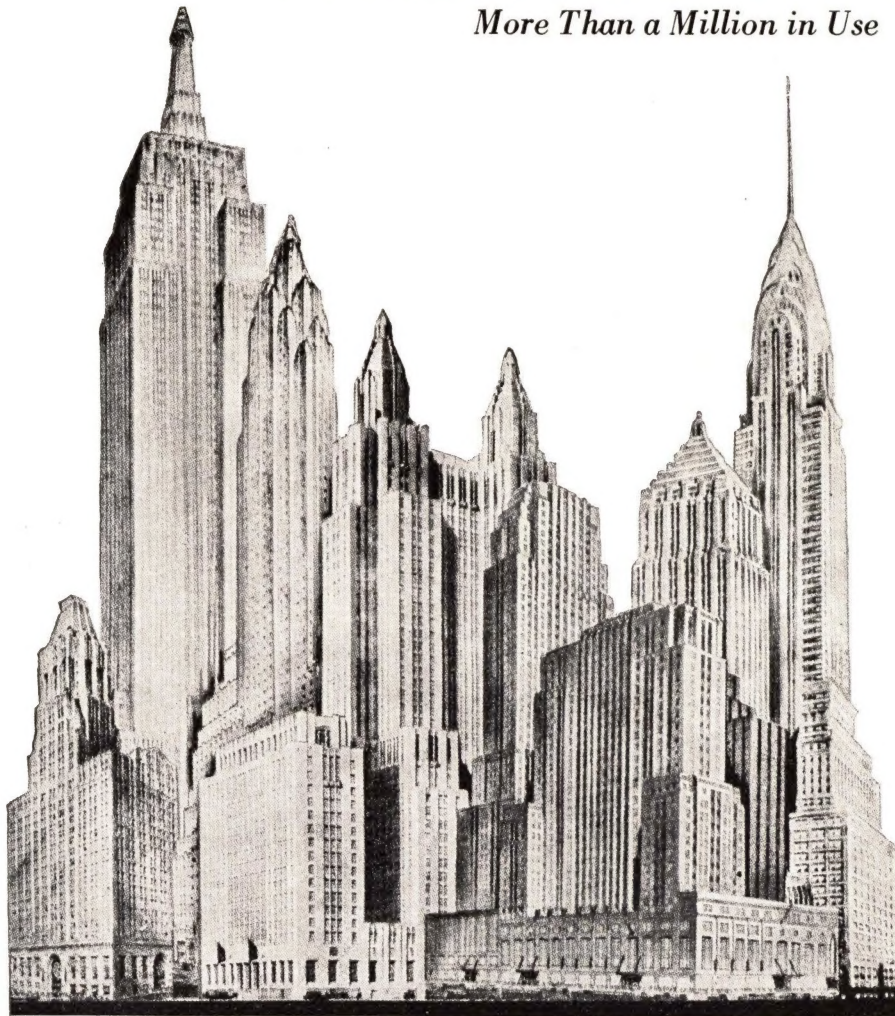
**Main Office: Bush & Hamburg Streets, Baltimore, Maryland**

**District Sales Offices: New York, Boston, Philadelphia, Chicago**

**Factories: Baltimore, Maryland, Bremen, Indiana**



## CAMPBELL DOUBLE HUNG WINDOWS

*More Than a Million in Use*Baltimore Trust Bldg.  
Baltimore, Md.Cities Service Bldg.  
New York CityWaldorf-Astoria Hotel  
New York CityGulf Building  
Pittsburgh, Pa.Chrysler Bldg.  
New York CityEmpire State Bldg.  
New York CityCarew Tower Bldg.  
Cincinnati, Ohio

The decision to use Double-Hung Windows in any type of building naturally leads to the selection of the window which has been incorporated in outstanding building projects for many years. A few typical installations of Campbell Double-Hung Windows, shown above, testify to their acceptability and their satisfactory service in nationally known structures.

Weather-tightness is assured by a construction which permits a guarantee against leakage in excess of  $\frac{1}{2}$  cubic foot per minute per lineal foot of sash perimeter under a static pressure equivalent to that exerted by wind of twenty-five miles per hour velocity.

Ease of Operation distinguishes the unique Campbell design which eliminates more than 80% of the friction surfaces usually found in other Double-Hung windows.

Adaptability to all types of building construction is inherent in the window design. Multiple openings with weightless or standard mullions broaden the scope of building treatment.

Maintenance Cost is negligible. All exposed members are rust proofed after fabrication and before shop painting. No joints come in contact with masonry. The extra strength and rigidity of sash and frame members contribute to long, trouble-free use.

Underwriters' Labels can be applied when specified.

Ease of Installation and Glazing contribute to an economical first cost.

Two Models are Available, identical in design. Model 26 MW is slightly heavier in certain members than Model 25 MW, as shown in the table at right.

## SPECIFICATIONS

## General:

1. Steel Double Hung Windows shall be Campbell Model 26 MW (or 25MW) as manufactured by the Campbell Metal Window Corporation. No substitution shall be made without written approval from the architect.

## Material:

2. See Table of Gauges, below.

## Construction:

3. Frame members shall be accurately rolled or formed, neatly coped to abutting members and assembled by means of mortise and tenon joints, riveted, or welded joints. The sill members shall be solidly welded to the staff beads, making a water-tight joint.

4. Sash members shall be mitred, butt welded and ground smooth. Each sash shall have adjusters within the jamb to eliminate side play and assure smooth, easy operation.

5. Meeting rails shall be interlocking.

6. Window design shall provide for positive adjustment of the sash way for both upper and lower sash.

7. Inside jamb cover plates shall be removable and provide easy access to the counter-weights.

8. Sash shall be designed for glazing from the interior. Glass to be held in place by means of flat glass stops inserted in glass stop holders welded to the sides and top of each sash.

## Weathering:

9. Flexible, non-ferrous, metallic weatherstrips shall be fitted to the sill, head and meeting rail. Interlocking, flexible, metallic weatherstrips shall be provided at the sides of the sash and concealed within the jambs.

## Hardware:

10. Sash shall be hung on No. 130, hot galvanized, steel sash chains and counter-weighted with single-unit, cast iron weights. Pulley assemblies shall consist of pressed steel housings, securely attached to the frame, and pressed steel pulley wheels with graphite bronze bushings mounted on  $\frac{3}{8}$ " diameter cold rolled steel shafts. Pulley assemblies and chains shall be entirely concealed within the jambs.

11. Adjustable rubbing strips shall be attached to the parting strips at the ends of the meeting rail.

## Shop Finish:

13. All steel members except glass stops, holders and cover plates shall be zinc coated after fabrication by means of electro-galvanizing, after which the windows shall be given one shop coat of protective paint, oven dried.

## Erection:

14. Windows shall be set plumb and square in prepared openings. The sash shall be adjusted for easy operation and the weights hung after the glazing has been completed.

## Guarantee:

15. The amount of infiltration of air through Standard Double Hung Windows shall be not more than  $\frac{1}{2}$  cubic foot of air per foot of sash perimeter per minute when subjected to a static air pressure equivalent to that exerted by a wind of twenty-five (25) miles per hour velocity.

TABLE OF GAUGES

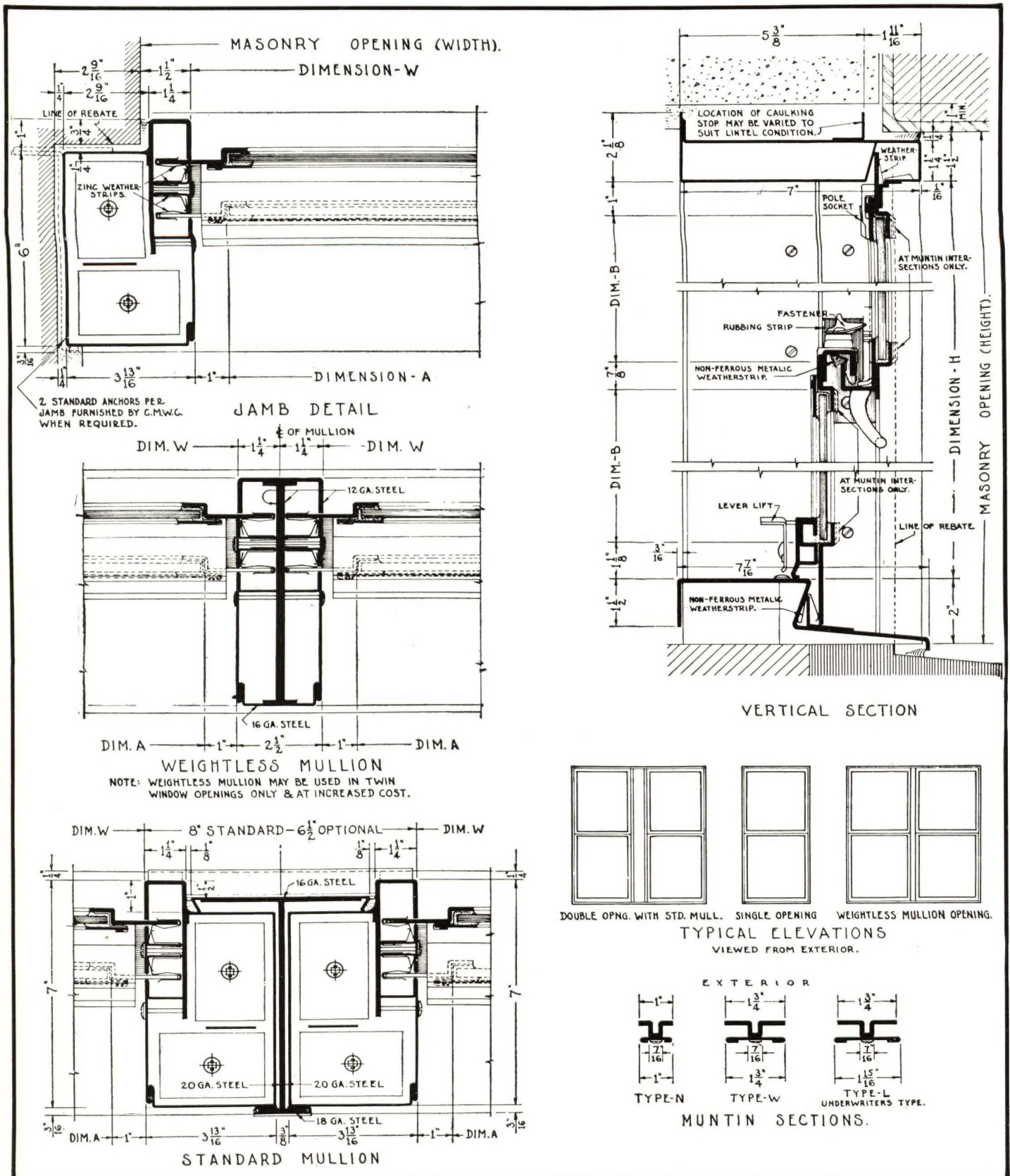
| Member                     | Heavy Type Model 26-MW | Intermediate Type Model 25-MW |
|----------------------------|------------------------|-------------------------------|
| Sill                       | 12 GA.                 | 12 GA.                        |
| Staff bead or chain pocket | 12 GA.                 | 12 GA.                        |
| Sash                       | 12 GA.                 | 14 GA.                        |
| Glass stop                 | 14 GA.                 | 14 GA.                        |
| Parting strip or baffle    | 16 GA.                 | 16 GA.                        |
| Head                       | 16 GA.                 | 16 GA.                        |
| Weight box                 | 16 GA.                 | 20 GA.                        |
| Lift rail                  | 16 GA.                 | 16 GA.                        |
| Jamb cover                 | 16 GA.                 | 20 GA.                        |
| Glass stop holder          | 20 GA.                 | 20 GA.                        |



## CAMPBELL DOUBLE HUNG WINDOWS

*More Than a Million in Use*

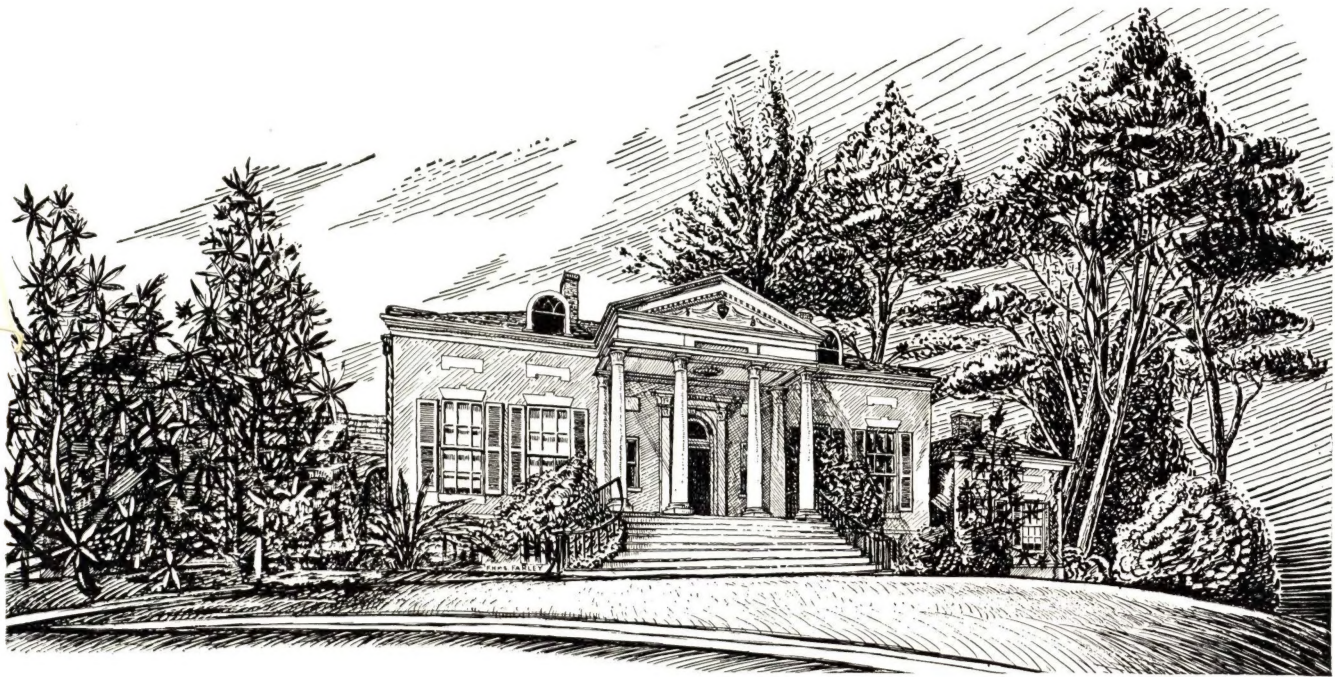
TYPICAL DETAILS MODEL 25 MW &amp; 26 MW — Scale of Details 3" = 1'-0"











HOMEWOOD. Built by Charles Carroll for his son. C. 1801. Baltimore, Md.

## MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOW

*The Modern Window for Homes of Traditional Design*



THE CALDWELL HOUSE—Watertown, Mass. Built C. 1742

Two examples of fine old homes are illustrated here which have influenced the architectural treatment of residences for more than a hundred years. They are part of America's splendid tradition in home building.

One feature is essential to their design—the use of double hung windows. These windows are typically American. They are the kind of windows with which housewives are familiar. They are predominantly the most-used windows for homes.

Yet *modern* windows are made of steel. The advantages which have resulted in virtually universal use of steel windows in industrial buildings, office buildings, hospitals, schools and public buildings apply with even greater emphasis to the modern home. Steel windows are weather-

tight, cannot swell or stick, give greater light area, resist fire and are not food for termites, nor do they rot.

Campbell Model 101 has all these advantages. It offers them in a DOUBLE HUNG window at a low price, made possible by modern methods of production, which removes the final barrier to the use of steel double hung windows in residential operations, large or small.

The experience gained in the years during which more than a million Campbell Double Hung Windows have been used in the world's largest buildings insures the soundness of design and workmanship.

The distinctive Campbell construction offers a maximum weathertightness without sacrificing ease of operation in damp weather or dry. The window is 100% weather-stripped yet it has 80% less friction surface than conventional types. Complete Bonderizing after fabrication and before shop painting resists corrosion and adds the final assurance of long, trouble-free life.

Campbell Model 101 Windows have been designed for the homes that require double hung windows to give authenticity to the architectural lines. They are made for home owners who want the familiar advantages of ventilation, screening, and decoration which only double hung windows possess. They are commended to the attention of architects and builders who seek to carry out sound tradition with modern material, at a cost which is in line with that of windows made of wood.



# MODEL 101 — RESIDENTIAL STEEL DOUBLE HUNG WINDOW

A variety of sizes is essential to the adaptability of a window to Residential work.

All the types marked with an asterisk (\*) are carried in stock for immediate shipment, and offer a wide selection of opening sizes to conform to nearly every residential building requirement. Standard types are available for prompt factory shipments.

Muntin arrangements may be varied to conform to the requirements of the architectural treatment. All muntins may be omitted and full advantage taken of the exception-










































ally large ratio of glass area to opening size which these windows provide.

Small lights may be specified in both upper and lower sash, or horizontal muntins only may be retained for more modern treatment.

The numerical designation of the various types indicates the glass size. In Type No. C-1215, for instance, all lights are twelve inches wide and fifteen inches high. The letters refer to glass light arrangement.

Sizes shown are opening sizes. Refer to pages 8, 9, and 11 for details.

## STOCK AND STANDARD TYPES AND SIZES (Single Windows)

|                       | 2'-0 $\frac{3}{8}$ "  |   | 2'-10 $\frac{5}{8}$ "   |   | 3'-1 $\frac{5}{8}$ "  |   | 3'-4 $\frac{5}{8}$ "  |  |   |   |   |   |
|-----------------------|---|---|---|---|---|---|---|--|---|---|---|---|
| 2'-11 $\frac{3}{8}$ " |    |    |   |   |   |   |   |  |   |   |   |   |
|                       | * D1015   | * DA1015  |   |   |   |   |   |  |   |   |   |   |
| 3'-10 $\frac{3}{8}$ " |    |    |    |    |    |    |    |    |    |   |   |   |
|                       | * E1010   | * EA1010  | R2010   | * C1010   | * CA1010  | R3010   | C1110   | CA1110   | R3310   |   |   |   |
| 4'-6 $\frac{1}{8}$ "  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       | E1012   | EA1012  | R2012   | * C1012   | * CA1012  | R3012   | * C1112   | * CA1112   | R3312   | C1212   | CA1212  | R3612   |
| 5'-2 $\frac{1}{8}$ "  |  |  |  |  |  |  |  |  |  |  |  |  |
|                       | E1014   | EA1014  | R2014   | C1014   | CA1014  | R3014   | * C1114   | * CA1114   | R3314   | * C1214   | * CA1214  | R3614   |
| 5'-6 $\frac{1}{8}$ "  |   |   |   |   |   |   |  |  |  |  |  |  |
|                       |   |   |   |   |   |   | * C1115   | * CA1115   | R3315   | * C1215   | * CA1215  | R3615   |

**GENERAL NOTES**

\* ALL TYPES NOT MARKED ARE STANDARD.

\* INDICATES COMMODITY STOCK TYPES.

SIZES ARE MASONRY OPENINGS-SEE DETAILS.

REFER TO DRAWING 101 FOR STANDARD DETAILS.

### GENERAL NOTES

\* ALL TYPES NOT MARKED ARE STANDARD. INDICATES COMMODITY STOCK TYPES. SIZES ARE MASONRY OPENINGS—SEE DETAILS. REFER TO DRAWING 101 FOR STANDARD DETAILS.

MUNTINS MAY BE OMITTED FROM ALL STANDARD TYPES IF DESIRED. PARTIAL OMISSION MAY BE MADE PROVIDED THAT REMAINING MUNTINS ARE IN STANDARD POSITION. WHERE ALL MUNTINS ARE OMITTED THE GLASS SIZE IN BOTH UPPER AND LOWER SASH BECOMES THE SAME AS IN THE LOWER SASH OF TYPES DA, EA & CA.

LIGHTS NOT LETTERED ARE OF THE SIZE INDICATED BY THE NUMBERS IN THE TYPE SYMBOLS. THUS IN TYPE C1012 ALL LIGHTS ARE 10"x12". IN TYPE CA1012 THE LIGHTS IN THE UPPER SASH ONLY ARE 10"x12", AND THE GLASS SIZE FOR THE LOWER SASH IS GIVEN IN THE TABLE OF GLASS SIZES. IN TYPE R3012 THE GLASS SIZE OF ALL LIGHTS IS GIVEN IN THE TABLE OF GLASS SIZES.

### TABLE OF GLASS SIZES

| SYMBOL | GLASS SIZE                              | SYMBOL | GLASS SIZE               |
|--------|---|--------|--------------------------|
| A      | 20 $\frac{1}{4}$ " x 15"                | Q      | 20 $\frac{1}{4}$ " x 10" |
| B      | 20 $\frac{1}{4}$ " x 20 $\frac{1}{4}$ " | R      | 20 $\frac{1}{4}$ " x 12" |
| C      | 20 $\frac{1}{4}$ " x 24 $\frac{1}{4}$ " | S      | 20 $\frac{1}{4}$ " x 14" |
| D      | 20 $\frac{1}{4}$ " x 28 $\frac{1}{4}$ " | T      | 30 $\frac{1}{2}$ " x 10" |
| E      | 30 $\frac{1}{2}$ " x 20 $\frac{1}{4}$ " | U      | 30 $\frac{1}{2}$ " x 12" |
| F      | 30 $\frac{1}{2}$ " x 24 $\frac{1}{4}$ " | V      | 30 $\frac{1}{2}$ " x 14" |
| G      | 30 $\frac{1}{2}$ " x 28 $\frac{1}{4}$ " | W      | 33 $\frac{1}{2}$ " x 10" |
| H      | 33 $\frac{1}{2}$ " x 20 $\frac{1}{4}$ " | X      | 33 $\frac{1}{2}$ " x 12" |
| J      | 33 $\frac{1}{2}$ " x 24 $\frac{1}{4}$ " | Y      | 33 $\frac{1}{2}$ " x 14" |
| K      | 33 $\frac{1}{2}$ " x 28 $\frac{1}{4}$ " | Z      | 33 $\frac{1}{2}$ " x 15" |
| L      | 33 $\frac{1}{2}$ " x 30 $\frac{1}{4}$ " | AA     | 36 $\frac{1}{2}$ " x 12" |
| M      | 36 $\frac{1}{2}$ " x 24 $\frac{1}{4}$ " | AB     | 36 $\frac{1}{2}$ " x 14" |
| N      | 36 $\frac{1}{2}$ " x 28 $\frac{1}{4}$ " | AC     | 36 $\frac{1}{2}$ " x 15" |
| P      | 36 $\frac{1}{2}$ " x 30 $\frac{1}{4}$ " |        |                          |



# MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOW

Where twin windows are to be used in residential installations, Model 101 offers the convenience and economy of unit built assemblies. Each of the types shown here combines two upper and lower sash assemblies with a specially designed narrow mullion, all in one frame for easy installation. All sizes marked with an asterisk (\*)


are carried in stock for immediate shipment. Standard type are available for prompt factory shipments.

The same wide variety of glass arrangement, as used in the single units, is available in the twin units.

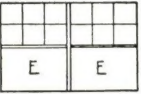
Sizes shown are opening sizes. Refer to pages 8, 9, and 11 for details.

## STOCK AND STANDARD TYPES AND SIZES (Twin Windows)


5'-8 $\frac{1}{4}$ "
6'-2 $\frac{1}{4}$ "




\* TC1010



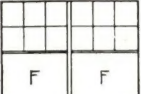
\* TCA1010



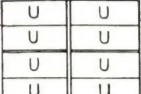
TR3010




\* TC1012



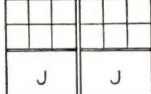
\* TCA1012



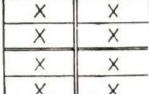
TR3012




TC1112



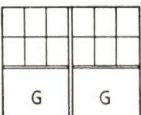
TCA1112




TR3312




\* TC1014



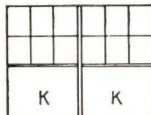
\* TCA1014



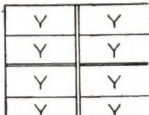
TR3014




\* TC1114



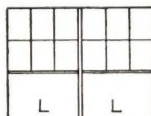
\* TCA1114



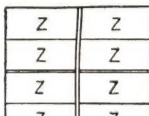
TR3314



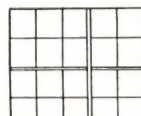
\* TC1115



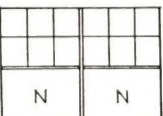
\* TCA1115



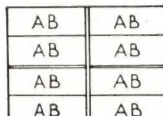
TR3315




\* TC1214



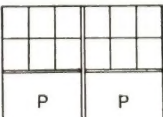
\* TCA1214



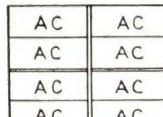
TR3614



\* TC1215



\* TCA1215



TR3615

6'-8 $\frac{1}{4}$ "



\* TC1214



\* TCA1214



TR3614



\* TC1215



\* TCA1215



TR3615



\* TC1214



\* TCA1214



TR3614



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TR3615



\* TC1214



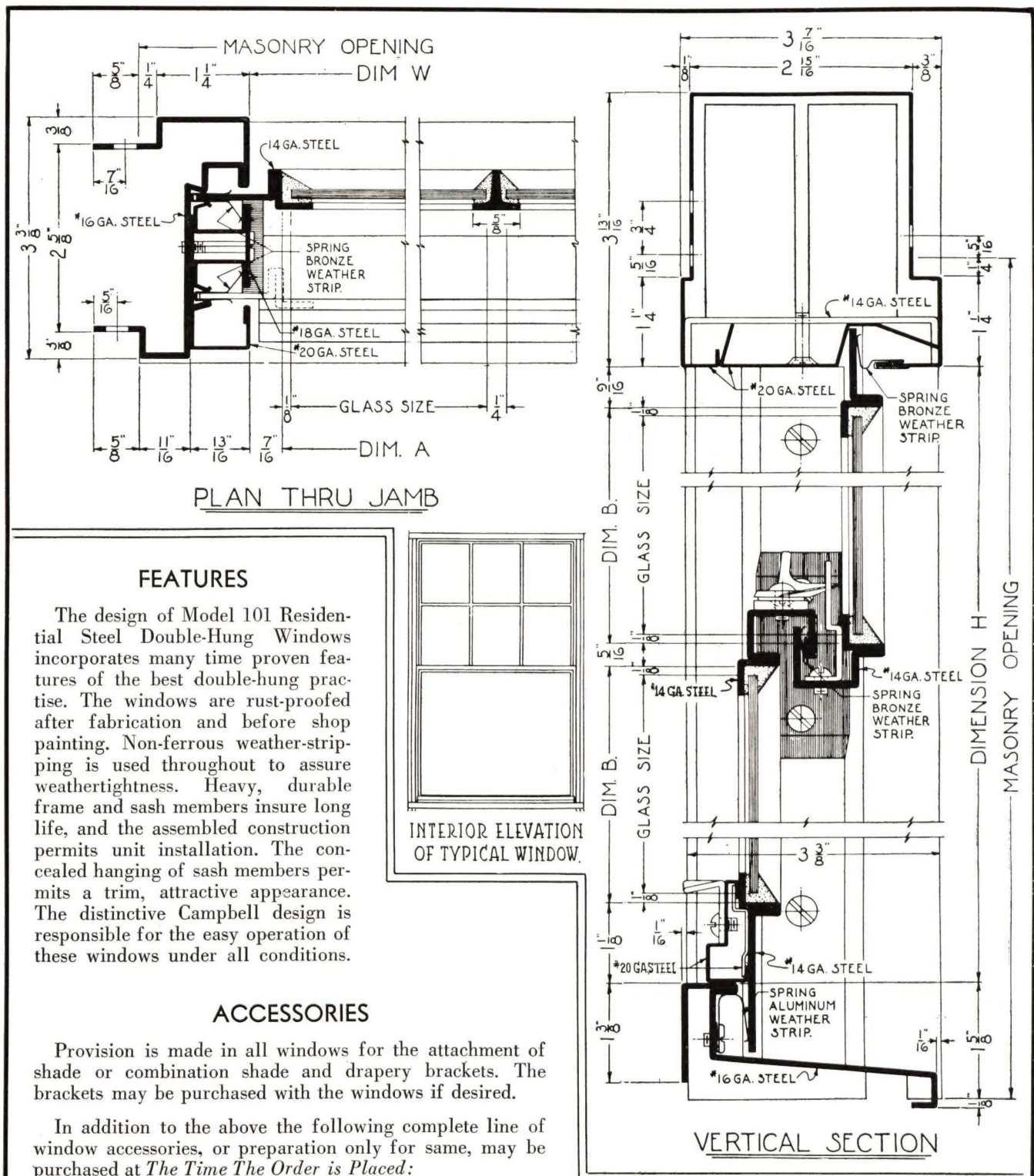
\* TCA1214





## MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOW

STANDARD DETAILS (Scale of Details—6"=1'-0")



## FEATURES

The design of Model 101 Residential Steel Double-Hung Windows incorporates many time proven features of the best double-hung practice. The windows are rust-proofed after fabrication and before shop painting. Non-ferrous weather-stripping is used throughout to assure weathertightness. Heavy, durable frame and sash members insure long life, and the assembled construction permits unit installation. The concealed hanging of sash members permits a trim, attractive appearance. The distinctive Campbell design is responsible for the easy operation of these windows under all conditions.

## ACCESSORIES

Provision is made in all windows for the attachment of shade or combination shade and drapery brackets. The brackets may be purchased with the windows if desired.

In addition to the above the following complete line of window accessories, or preparation only for same, may be purchased at *The Time The Order is Placed*:

|   |                        |
|---|------------------------|
| Interior Storm Sash   | Provision for Venetian |
| Steel Casings   | Blind Brackets         |
| Steel Stools  | Windshield Brackets    |
| Shutters (Specify Decorative or Operative. If Operative State whether sill adjusters will be used.) | Awnings                |

## HARDWARE

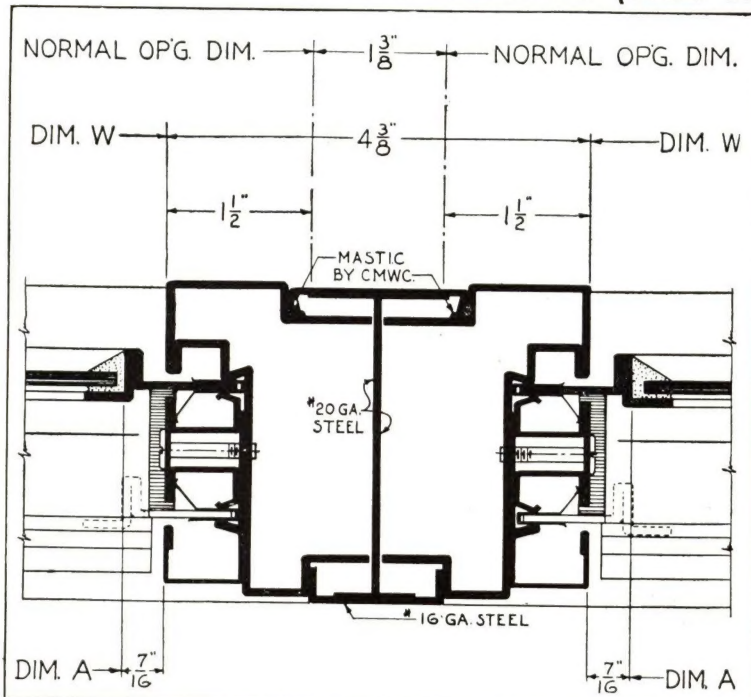
The hardware included with the windows consists of two steel lifts and bronze plated fastener which are attached at the factory.

Polished bronze hardware can be supplied in lieu of these standard items at a slight increase in cost. Window cleaner anchors are also available if required, at extra cost.

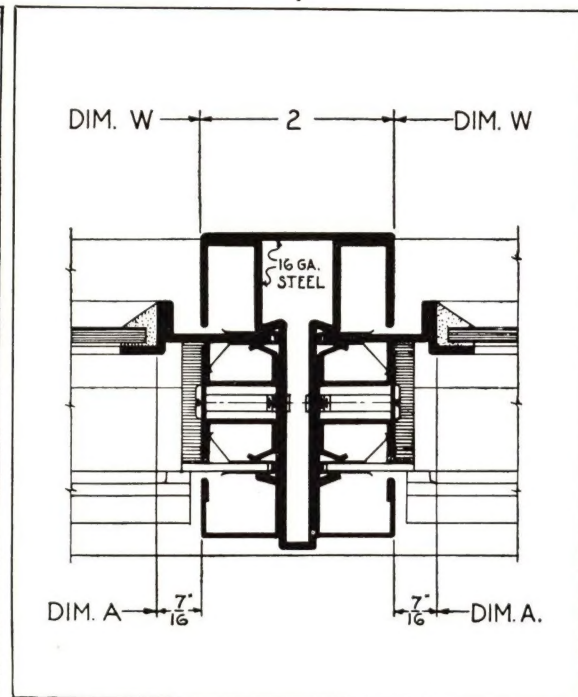


# MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOW

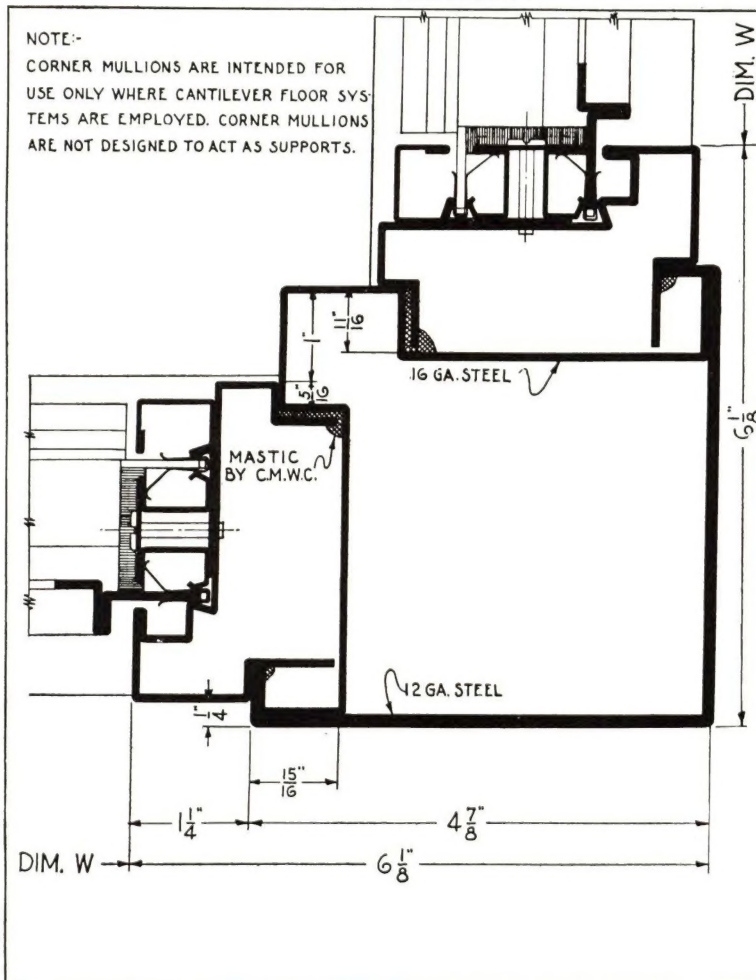
## MULLION DETAILS (Scale of Details—6"=1'-0")



STANDARD MULLION



MULLION FOR TWIN WINDOWS



CORNER MULLION

### SCREENS

The window is adaptable to conventional screening of nearly every type and four standard types are available, at extra cost, for shipment from the factory.

Stationary Half Screen is applied to the lower part of the window, outside, and fits tightly between the sill and the under side of the meeting rail. It is held in place with spring spacers on one side and is equipped with a handle in the center on either side. This type of screen may not be used with operative shutters having sill adjusters, or awnings.

Sliding Half Screen is used with operative shutters having sill adjusters or awnings, and consists of the Tubular Half Screen set in guides which are attached to the inside jamb members by means of screws.

Top Hung Screen covers the full height of the window and uses two hangers which are applied, to the outside of the head of the windows. Properly braced with non-re-wirable braces when more than 4½ feet high, these screens are secured four inches from the bottom by hooks provided for the purpose. Special provision at the factory is required for this type of screen which may not be used with operative shutters having sill adjusters or with awnings.



## MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOW



## CONDENSED SPECIFICATIONS

## Specify

Model 101 Steel Double Hung Window manufactured by Campbell Metal Window Corporation, Baltimore, Md.

## Material

Sill and jamb members shall be 16 gauge; sash members 14 gauge; baffle members 18 gauge; head members, lift rail and jamb cover plates 20 gauge; low carbon steel.

## Construction

Frame members shall be accurately rolled or formed, as shown on the drawings, neatly coped to abutting members and assembled by means of mortise and tenon joints, riveted, or welded joints.

Corners of sash shall be mitred, butt welded and ground smooth. Each sash shall have adjusters within the jambs to eliminate side play and assure smooth, easy operation.

The meeting rails shall be interlocking.

Sash guides shall be concealed within the jambs.

Muntins, where required, shall be hot rolled tee members, mortised, tenoned and riveted to the sash members. Muntins at intersections shall be mechanically interlocked with flush joints.

Sash shall be designed for glazing from the exterior. Glass to be held in place with spring wire glazing clips.

## Weathering

Flexible, non-ferrous, metallic weatherstrips shall be fitted to the sill, head and meeting rail and provided within the jambs.

Weatherstrips shall be designed so that they will not impede the free movement of the sash.

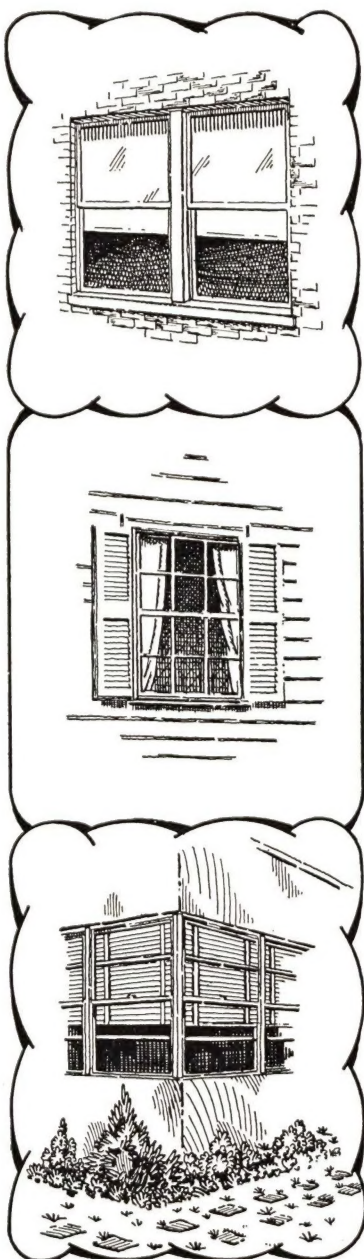
## Hardware

Sash shall be counterbalanced by means of approved type spring balances. Adjustable rubbing strips shall be attached to the baffle members at the ends of the meeting rail.

Finished hardware shall be of window manufacturer's standard pattern. Two steel lifts and one bronze plated malleable iron fastener with steel keeper shall be provided for each window. (Solid bronze hardware may be substituted at additional cost).

## Finish

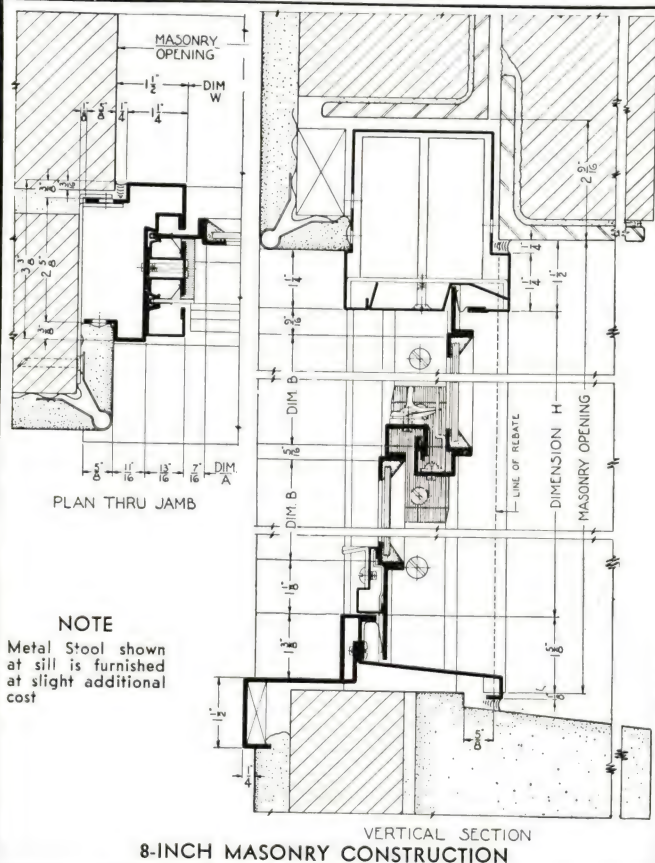
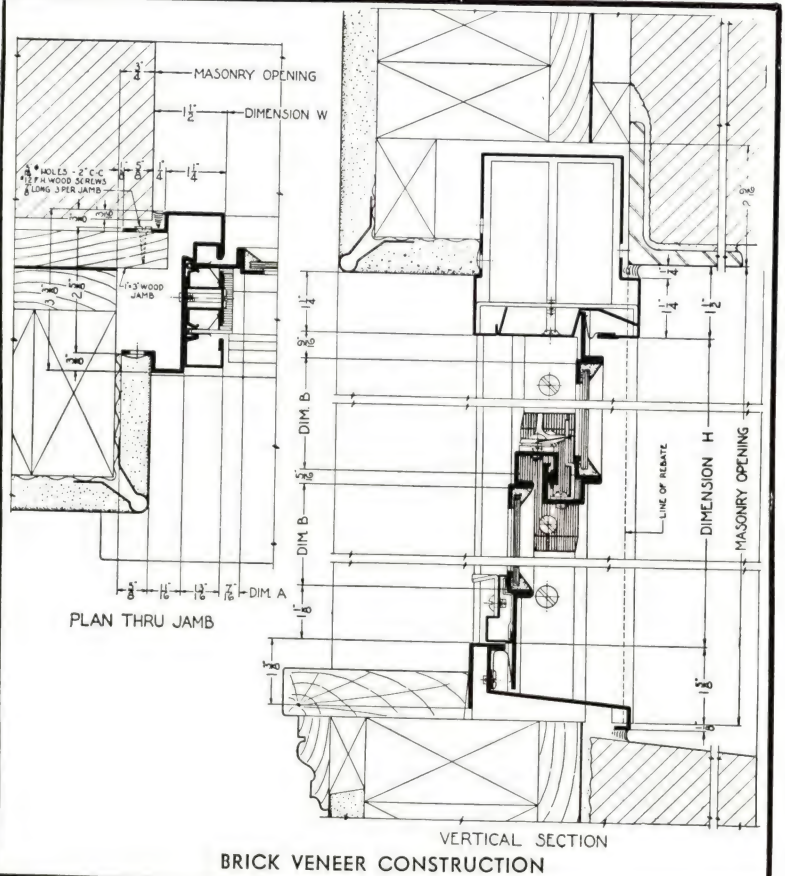
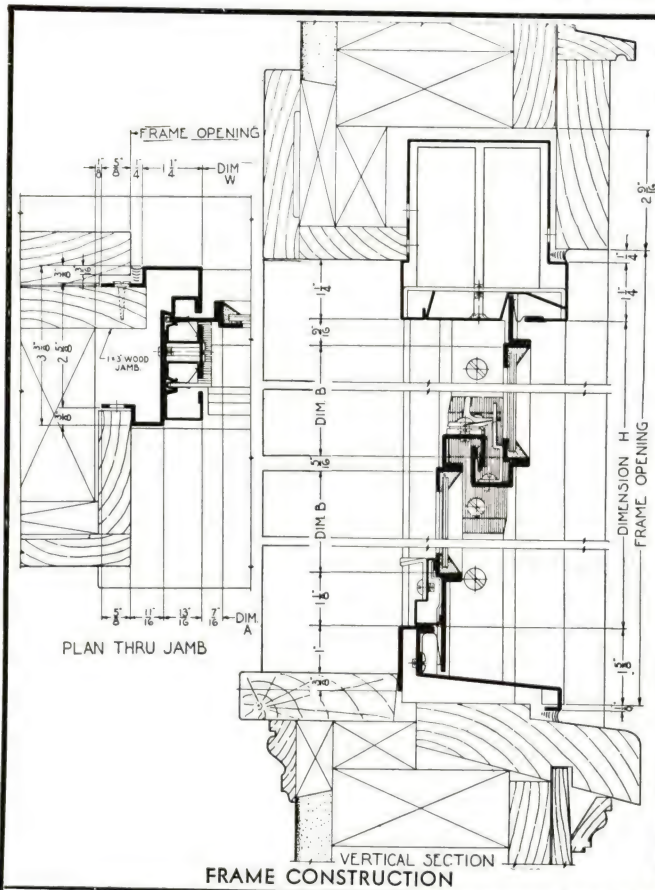
All steel members shall be rust proofed after fabrication with a phosphate coating applied by means of the Bonderite Process, after which the windows shall be given one shop coat of protective paint, baked on.



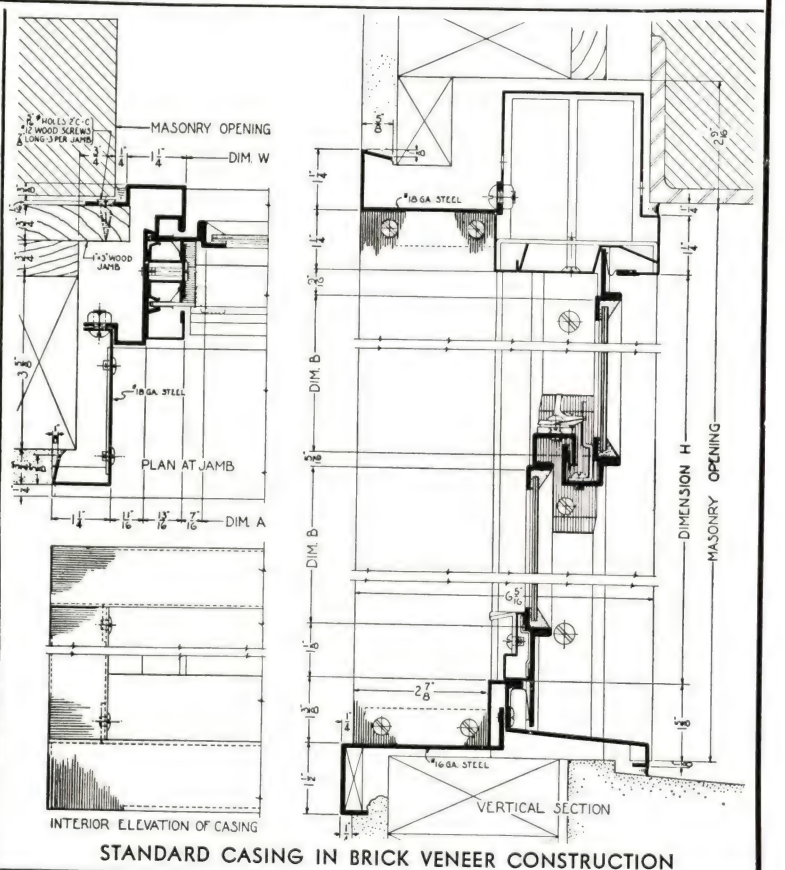


# MODEL 101 RESIDENTIAL STEEL DOUBLE HUNG WINDOWS

## INSTALLATION DETAILS — (SCALE OF DETAILS 3" = 1' - 0")

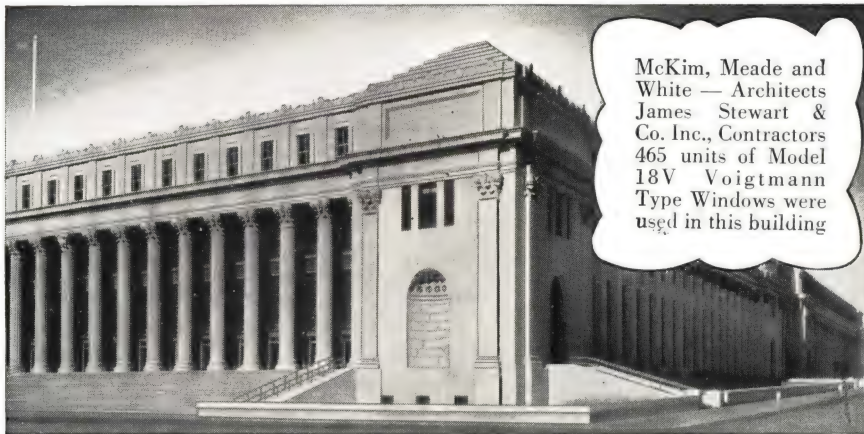


**NOTE**  
Metal Sill shown  
at sill is furnished  
at slight additional  
cost





## VOIGTMANN TYPE DOUBLE HUNG WINDOWS



New York Post Office Annex

Hollow Metal Double Hung Windows were designed to simulate the traditional lines of wood windows and to provide fire protection—at low cost. The rapidly increasing acceptance of the Voigtman Type Campbell Window testifies to its highly satisfactory fulfillment of these conditions.

Exceptional ease of operation is an outstanding feature of the Voigtman Type Window. The ingenious application of non-ferrous metal weatherstripping assures a thoroughly weathertight assembly without impeding the free movement of the sash in any way.

Sash members are tubular with all ends closed and all exposed edges eliminated, assuring maximum strength, rigidity and long life. Accurate forming and fitting of all members, the attention paid to workmanship and finish suggest the wisdom of a critical point-by-point comparison with competitive windows. Voigtman Type windows, though low in price, are distinctly quality windows.

The two types shown in the details on the opposite page are the Models 18-V and the 20-V, the design being the same for both types. Gauges of members vary as shown in the table under the specifications to the right.

Where heavier gauges are desired the Model 18-V may be specified with 14 gauge sills, 16 gauge heads and all other members of 18 gauge at a slight additional cost.

The widespread use of Voigtman Type Windows in Post Office Buildings, Hotels, Schools, Office Buildings and Public Buildings is indicated by a few recent typical installations listed below.

SOME RECENT INSTALLATIONS  
OF VOIGTMANN DOUBLE HUNG WINDOWS

U. S. Post Office and Court House, Buffalo, N. Y.  
Eli Lilly and Company Building, Indianapolis, Ind.  
U. S. Bureau of Engraving, Washington, D. C.  
Kalamazoo County Court House, Kalamazoo, Mich.  
Federal Office Building, Houston, Texas.

Rogers Hotel and Office Building, Idaho Falls, Idaho.  
U. S. Tobacco Company, Nashville, Tenn.  
Thomas Carr Howe School, Indianapolis, Ind.  
U. S. Post Office and Court House, Peoria, Ill.  
U. S. Post Office, Johnstown, Pa.

McKim, Meade and White — Architects  
James Stewart & Co. Inc., Contractors  
465 units of Model 18V Voigtman Type Windows were used in this building

## CONDENSED SPECIFICATIONS

## Specify

Steel Double Hung Windows, Voigtman Type, Model 18-V (or 20-V) manufactured by Campbell Metal Window Corporation, Baltimore, Md.

## Material

All members shall be hot dipped galvanized steel of gauges shown in the table below.

## Construction

Frames shall have mitred corners, soldered watertight and flush riveted. Sash shall have mitred corners, lapped, welded and soldered watertight. Glazing stops shall be attached with screws on the interior side of sash. Pulleys shall be removable type galvanized steel, bronze bushed, with  $\frac{3}{8}$ " steel axles. Sash weights shall be cast iron, sectional or single unit type. Chains shall be of galvanized steel, American Chain Company's No. 45 with galvanized connections to sash and weights. Rubbing strips shall be attached to each jamb at ends of meeting rails.

## Weathering

Lift and lock rails shall be fitted with flexible bronze weather strips. Pulley stiles and head shall be formed with double deep weathering grooves.

## Hardware

All finished hardware shall be of malleable iron, bronze plated, of Voigtman standard design. (Polished bronze hardware is available at slightly increased cost.)

## Shop Finish

Frames and sash shall receive a coat of gray metallic paint sprayed on at the factory.

## Guarantee

The amount of infiltration of air through standard double hung windows shall not be more than 1.00 cubic foot of air per foot of sash perimeter per minute when subjected to a static air pressure equal to that exerted by a wind of 25 miles per hour.

TABLE OF GAUGES

| MEMBER       | MODEL 18-V | MODEL 20-V |
|--------------|------------|------------|
| Sill         | 14 Ga      | 14 Ga      |
| Jamb         | 20 Ga      | 24 Ga      |
| Pulley Stile | 18 Ga      | 20 Ga      |
| Head         | 18 Ga      | 24 Ga      |
| Sash Rail    | 20 Ga      | 24 Ga      |
| Muntin Bar   | 20 Ga      | 24 Ga      |
| Sash Stile   | 18 Ga      | 24 Ga      |
| Muntin Cap   | 18 Ga      | 24 Ga      |



STANDARD DETAILS — (SCALE OF DETAILS — 3" = 1' - 0")





## CAMPBELL RESIDENCE CASEMENTS

### TYPICAL INSTALLATIONS



IN SINGLE HOMES (Mott Brothers Development—Garden City, L. I.)

For buildings where the architecture indicates the use of casement windows, Campbell Residence Casements are designed to combine rugged construction with excellent appearance in an inexpensive window.

Campbell Residence Casement members have been especially designed to give extra strength at no sacrifice of desirable narrow lines. A continuous 2-point contact of  $\frac{1}{4}$ " is maintained around the perimeter of all ventilators. Flush muntin joints contribute to a neat appearance.

The design of the hardware makes it attractive in appearance and thoroughly serviceable.

The screens require no holes in the cloth for handles and each ventilator has its own individual screen.

The wide acceptance of Campbell Residence Casements by architects and builders testifies to their fundamentally correct design, careful, accurate workmanship and exceptional value.



IN APARTMENT HOUSES (New Hotel Geneve, Mexico City, Mexico)



IN ROW HOUSE DEVELOPMENTS

#### Specify

Residence Casement Windows as manufactured by Campbell Metal Window Corporation, Baltimore, Maryland.

#### Material

Members shall be solid section, hot rolled, new billet steel shapes, not less than  $\frac{1}{8}$ " in scheduled thickness. They shall be especially designed with wide baffle legs and heavy fillets. Drip members shall be formed of No. 20 gauge steel, electro-galvanized. Frame members shall be symmetrical Zee members not less than 1" deep. Stiles shall be especially designed members for use adjacent to vents. Vent members shall be unsymmetrical Zee members not less than 1" deep. Muntins shall be especially designed Tee members not less than  $\frac{3}{4}$ " deep nor more than  $\frac{5}{8}$ " across the face. Mullions and Transom Bars between adjacent units set in same opening shall be hot rolled.

#### Construction

The corners of Frames and Vents shall be accurately mitred or coped and welded, with the exposed surfaces ground smooth. The Meeting Rails or Stiles shall be tenoned, mortised and riveted to frame members. Frame and Vent Assemblies shall be true and square. Continuous two point, flat

### CONDENSED SPECIFICATIONS

contact Weathering not less than  $\frac{1}{4}$ " wide shall be provided between vents and frames.

Muntins shall be continuous between frame members and between vent members. Muntin intersections shall be mechanically interlocked and provide a flush surface. Muntins shall be tenoned, mortised and riveted to frames or vents. Horizontal and vertical muntins shall be the same depth.

The windows shall be designed for Glazing from the exterior with spring wire glazing clips (not less than two clips per light) and putty.

#### Fins

Fins of No. 16 Gauge steel shall be applied to the head and jambs of all windows not set in wood, stone or metal subframes.

#### Hardware and Insect Screens

All Hardware shall be supplied in the manufacturer's standard pattern of solid non-ferrous material coated with a metallic lacquer finish of statuary bronze.

Insect Screens shall be supplied by the window manufacturer in one of the two types specified below as indicated in drawings.

1. Fixed Screens shall be firmly attached in accordance with manufacturers standard so as to permit easy removal. Vents of window so screened shall be hung on non-friction extension hinges with bronze bushed pins. They shall be operated by a

worm and gear underscreen operator that will permit opening and closing of vents without removing the screen. Fasteners shall be of the through-section type requiring no holes or grommets in screens.

2. Hinged Screens shall be hinged to swing in and secured by a keeper on side opposite hinges.

Vents of windows so screened shall be hung on friction type extension hinges with bronze bushed pins. One bronze vent fastener with combination strike and screen keeper shall be provided for each vent. Projection of fastener shall not be more than  $\frac{3}{4}$ " to permit screen to close when vent is closed and locked. All screen frames shall be formed of cold rolled steel not less than .037" thick. Screen cloth shall be of .0113" diameter, antique bronze wire woven to 16 mesh and shall be secured to frames by  $\frac{1}{4}$ " diameter removable splines.

#### Painting

All windows and screen frames shall be given one prime coat of gray rust resisting paint at the factory.

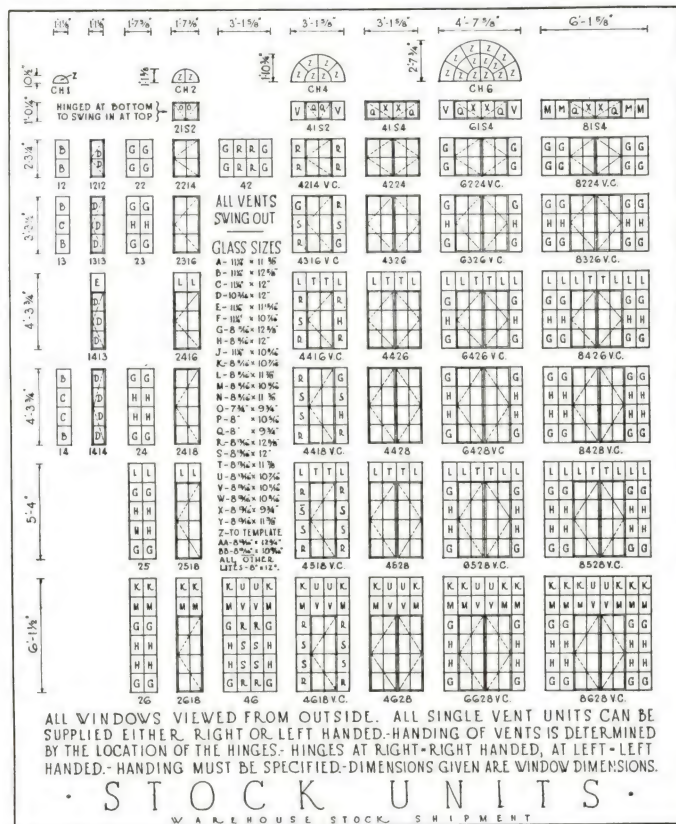
#### Mastic

The window manufacturer shall supply one pound of mastic for each 10 lineal feet of window unit perimeter.

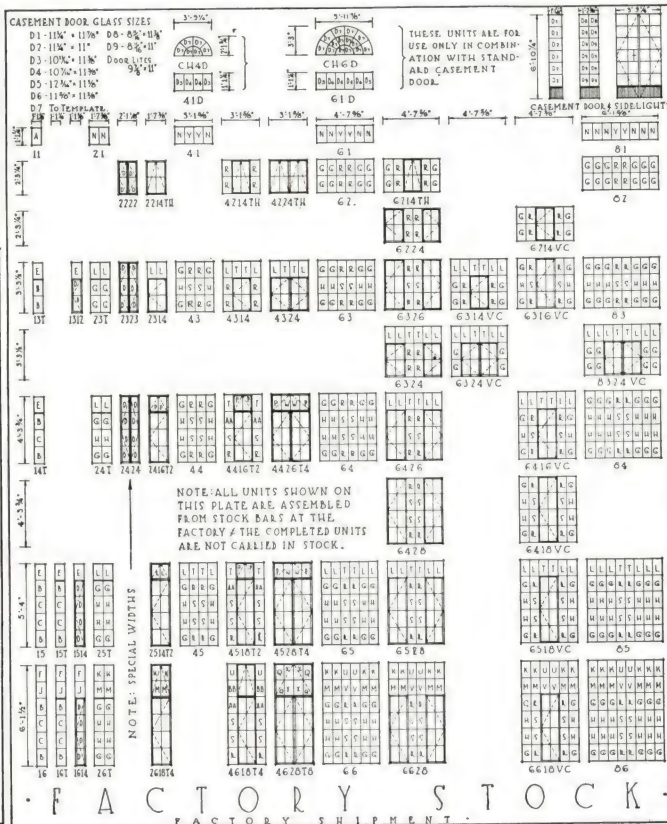


## CAMPBELL RESIDENCE CASEMENTS TYPES AND SIZES

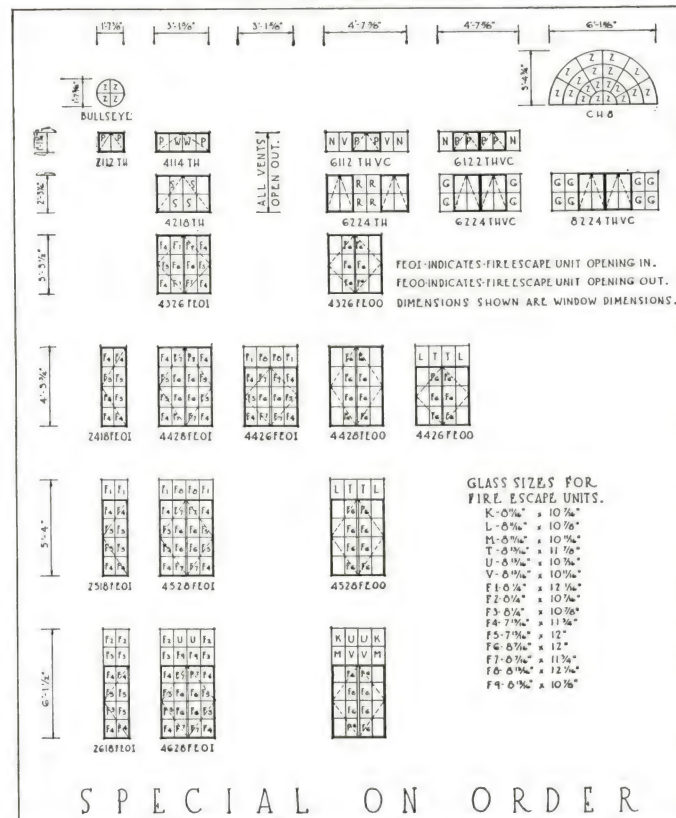
## WAREHOUSE STOCK UNITS



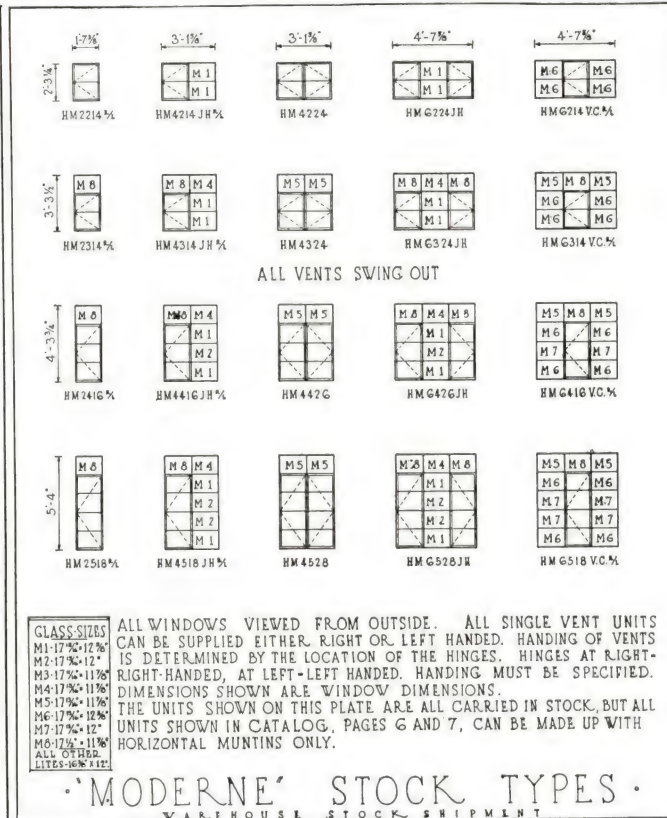
## UNITS FOR FACTORY SHIPMENT



### LISTED SPECIAL UNITS



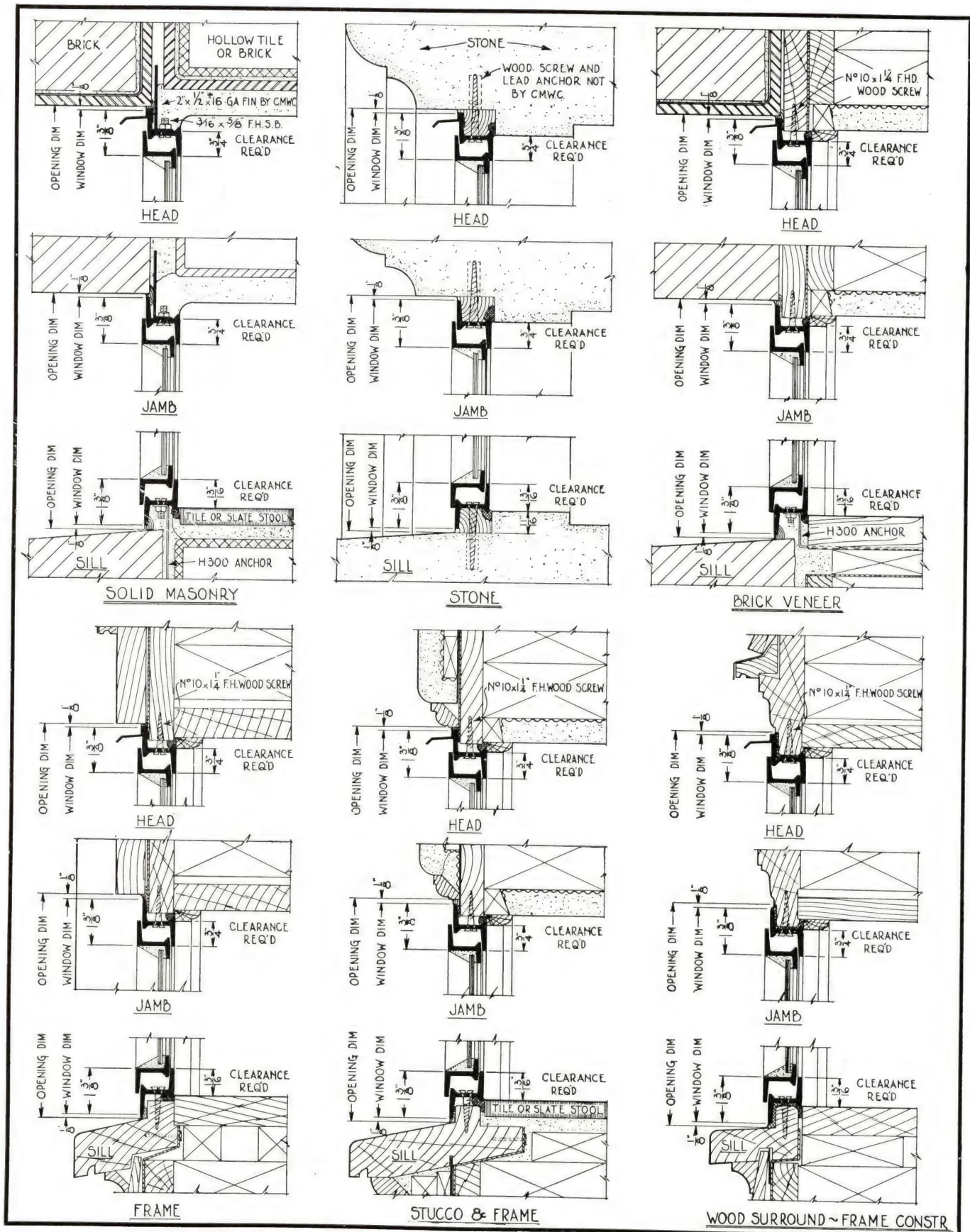
## "MODERNE" STOCK UNITS





# CAMPBELL RESIDENCE CASEMENTS

INSTALLATION DETAILS (Scale of Details 3" = 1'-0")



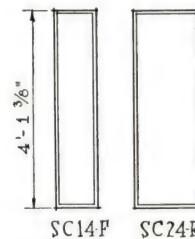
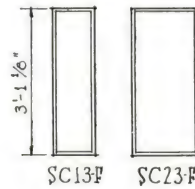
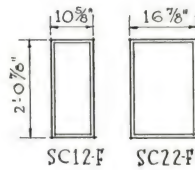
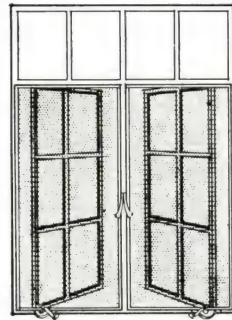
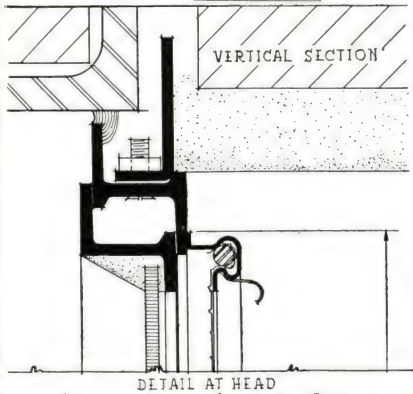


## CAMPBELL RESIDENCE CASEMENTS

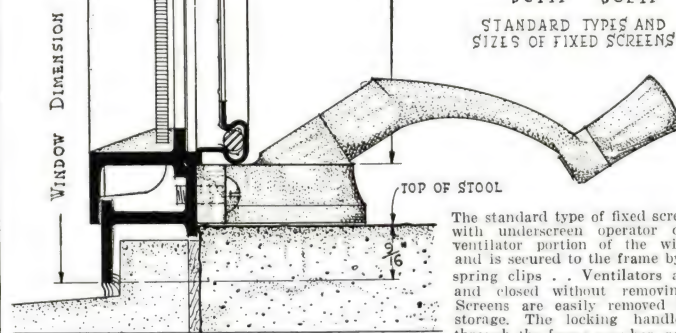
## SCREEN DETAILS

SCALE OF DETAILS  $\frac{1}{2}$  FULL SIZE

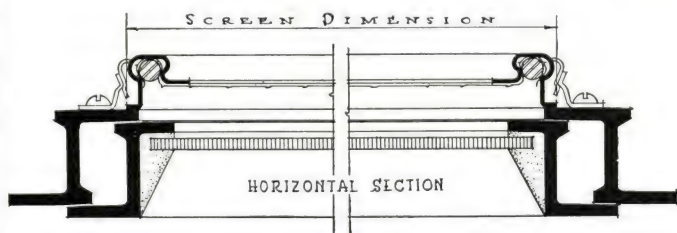
## FIXED SCREENS WITH UNDERSCREEN OPERATOR



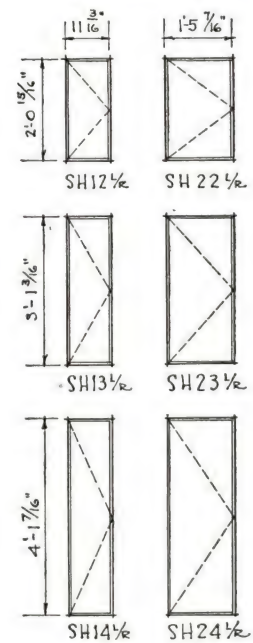
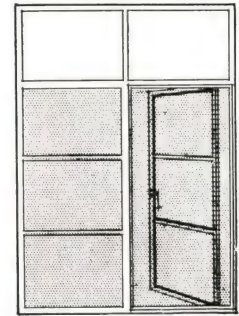
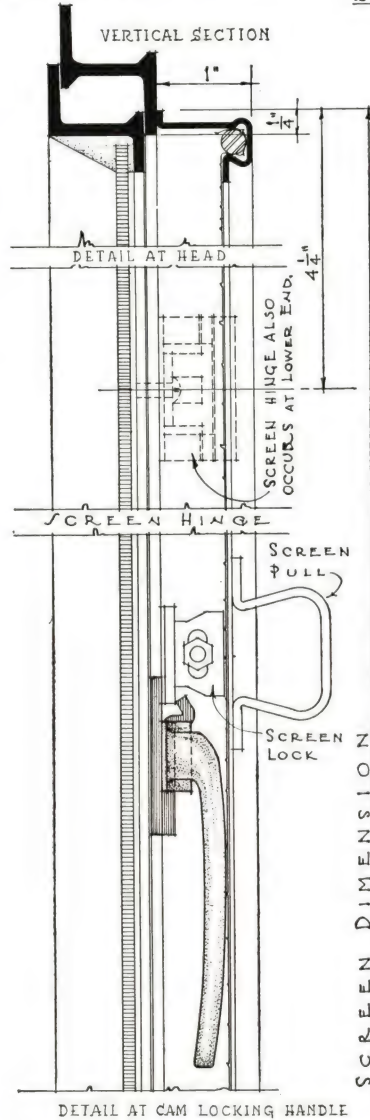
STANDARD TYPES AND SIZES OF FIXED SCREENS



DETAIL AT SILL SHOWING OPERATOR



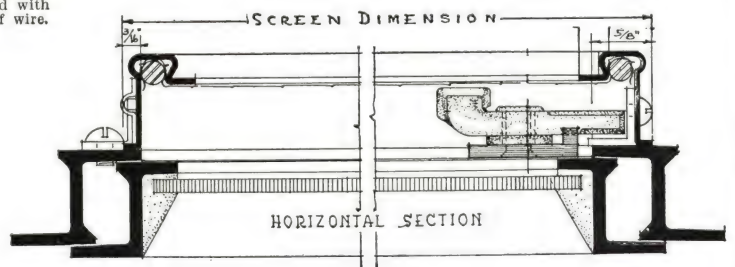
## SIDE HINGED TYPE



STANDARD TYPES AND SIZES SIDE HINGED SCREENS

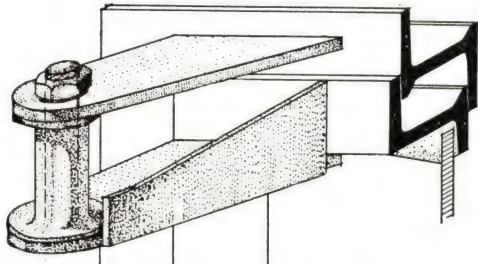
Side hinged screens project only 1" from the interior surface of the window. One screen is applied to each ventilator and is hinged at the same side as the vent. Designed to be used on windows having friction hinges and cam-locking handles, the screens are easily swung open to operate the ventilators. Heavy frames assure full contact all around the vent and the wire is held in the frame by splines which make wire replacement easy.

Handling of screens is same as handling of vents, that is,—left hand screens are used on left hand vents. Screens shown are supplied either in right or left hand types.





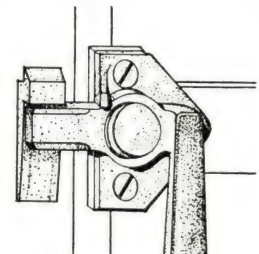
# CAMPBELL RESIDENCE CASEMENT HARDWARE



EXTENSION HINGE

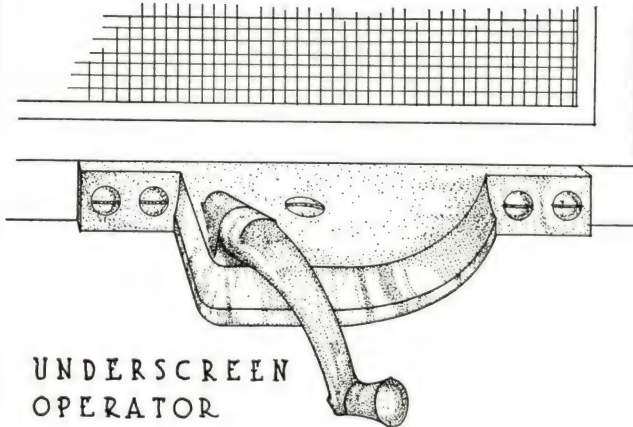
PROVIDES PROPER CLEARANCE FOR THE EASY CLEANING OF WINDOWS FROM THE INSIDE.

STANDARD  
HARDWARE.

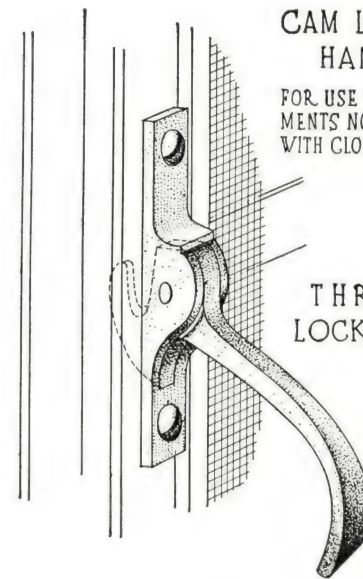


CAM LOCKING  
HANDLE

FOR USE WITH CASE-  
MENTS NOT EQUIPPED  
WITH CLOSE-UP SCREENS

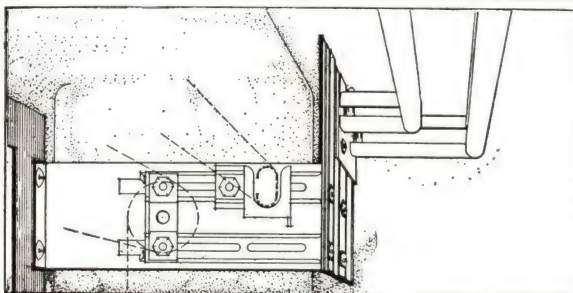


UNDERSCREEN  
OPERATOR

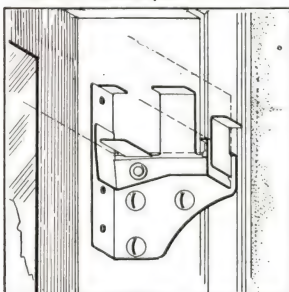


THRU SECTION  
LOCKING HANDLE

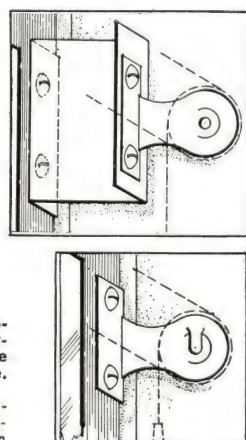
FOR USE WITH  
FIXED TYPE  
OF SCREEN



Combination Shade and Drapery Bracket. Provision is made in all windows for the application of a fixture for shades, curtains and valance or overdrapes.



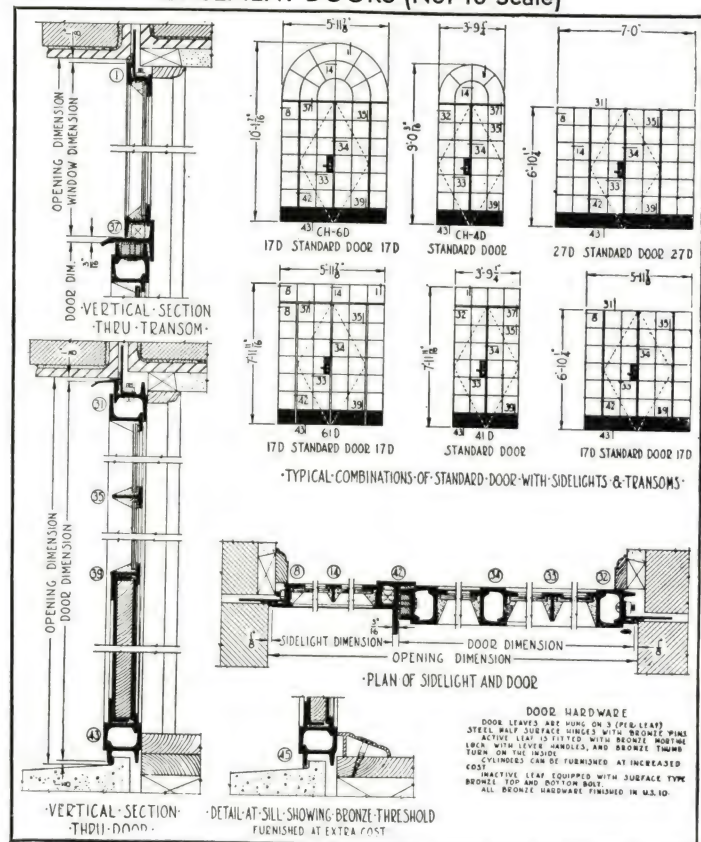
(Above) Venetian Blind Fixture. Provision can be made, in the field, for applying this fixture to the window frame. The fixture is made in a light and a heavy type.



(Upper right) Shade Bracket with Extension Clip. Provision for attaching this fixture, from which the shade hangs 17/8" in from the window, is made at the factory.

(Lower right) Shade Bracket. Two holes are provided in the window frame, at the factory, for attaching this fixture.

## CASEMENT DOORS (Not to Scale)





## CAMPBELL RESIDENCE CASEMENTS

## HOUSING TYPE

Campbell Housing Type Casements, combining the standard windows, hinged screens and steel interior casings, meet low cost housing project requirements as is evident from the fact that over 75,000 are in use. A few typical Housing Projects in which they have been used:

JANE ADDAMS HOUSING PROJECT,  
CHICAGO, ILL.

GREENBELT RESETTLEMENT PROJECT,  
BERWYN, MD.

HARLEM RIVER HOUSES,  
NEW YORK, N. Y.

LANGSTON TERRACE HOUSING  
PROJECT, WASHINGTON, D. C.

LA SALLE PLACE HOUSING PROJECT,  
LOUISVILLE, KY.

JULIA C. LATHROP HOMES,  
CHICAGO, ILL.

LAUDERDALE COURTS HOUSING  
PROJECT, MEMPHIS, TENN.

LOUISVILLE GREENTREE HOUSING  
DEVELOPMENTS, LOUISVILLE, KY.

LUCAS DRIVE HOUSING PROJECT,  
DALLAS, TEXAS

MEETING STREET MANOR & COOPER  
RIVER COURTS, CHARLESTON, S. C.

PARKSIDE HOUSING PROJECT,  
DETROIT, MICH.

SMITHFIELD COURT HOUSING PROJECT,  
MONTGOMERY, ALA.

UNIVERSITY HOUSING PROJECT,  
ATLANTA, GA.

BRAND WHITLOCK HOMES,  
DAYTON, OHIO

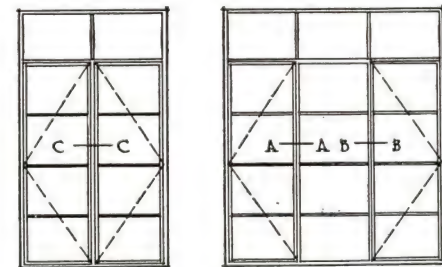
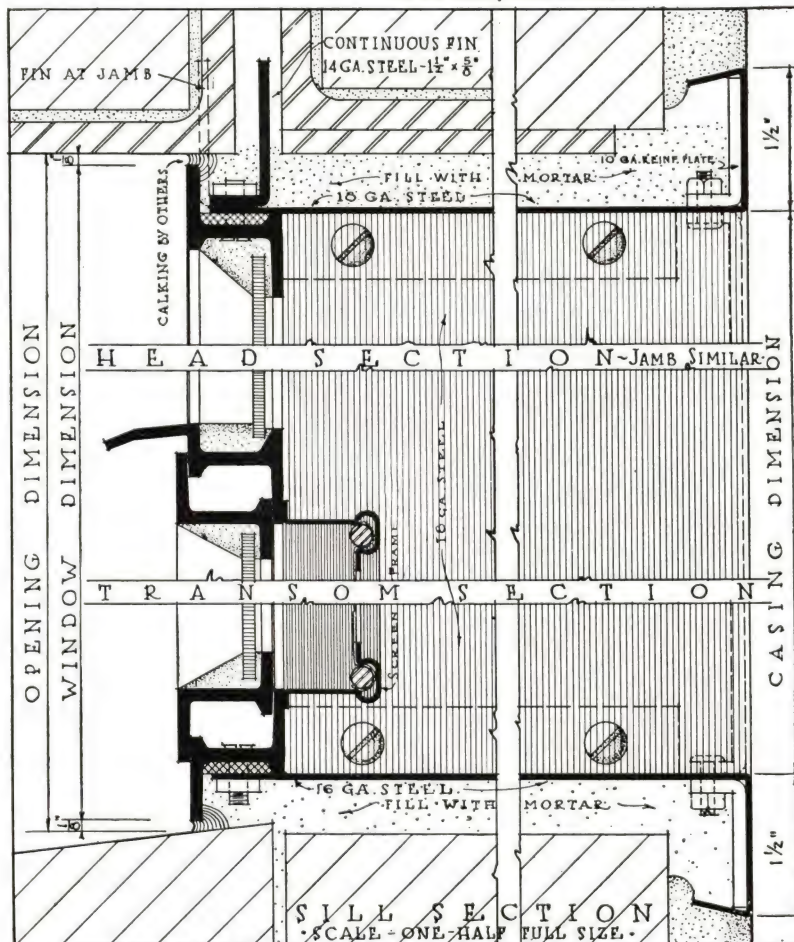


(Aerial Photo by Rudy Arnold)

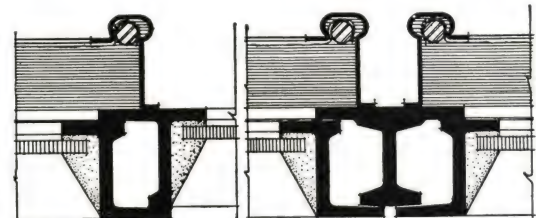
## HARLEM RIVER HOUSING PROJECT

Associated Architects,  
A. M. Brown, Chief Architect

Cauldwell-Wingate Co.  
General Contractors

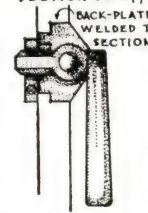


• TYPICAL ELEVATIONS  
• HOUSING TYPE CASEMENTS



• SECTION A-A •  
SECTION B-B OPPOSITE.

• SECTION C-C •



• LOCKING  
HANDLE •

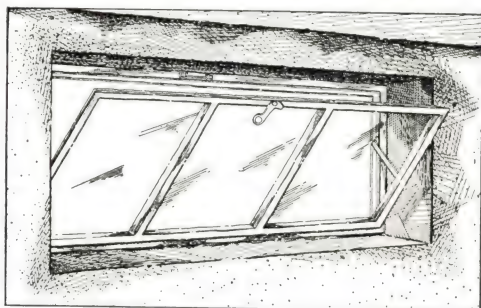
• SPECIFICATIONS •  
WINDOW SECTIONS IDENTICAL  
WITH STANDARD RESIDENCE  
CASEMENT. HINGES ARE EXTEN-  
SION FRICTION TYPE. LOCKING  
HANDLE AND STRIKE - BRONZE.  
JAMB AND HEAD CASINGS OF  
18 GA. STEEL; STOOL, 16 GA.  
CASINGS HAVE 10 GA. STEEL  
REINFORCING AT CORNERS.



# BASEMENT WINDOWS • UTILITY WINDOWS • WEATHER SASH

SCALE OF DETAILS — 3" = 1' - 0"

## BASEMENT WINDOWS



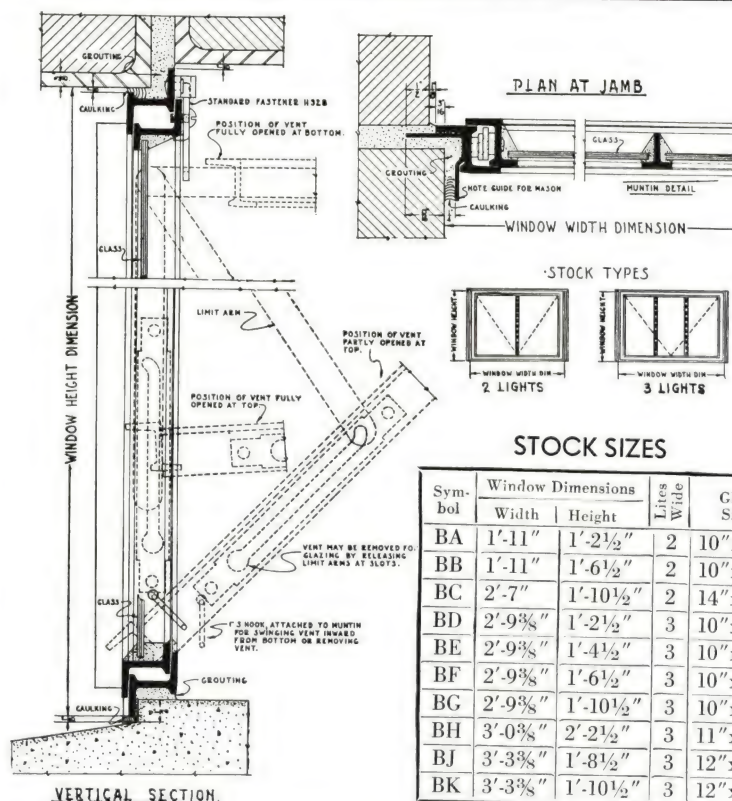
Two methods of ventilator operation are combined in the Campbell Basement Window.

The ventilator is hung on two arms and is secured at the top by a cam latch and keeper. It can be opened in at the top to approximately 45 degrees.

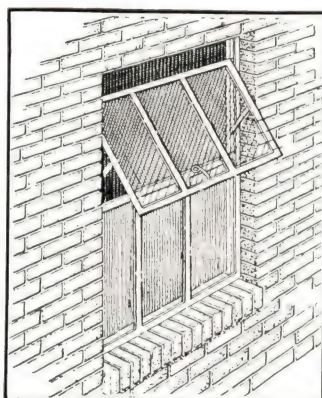
To open the ventilator from the bottom it is necessary only to raise the bottom of the vent over the sill and swing it inward until it rests on the limit arms. Then the ventilator can be raised and fastened in the open position by an S-hook which is attached to the muntin.

Two types in ten sizes are carried in stock, finished in one coat of gray paint.

Screens are available for all types and are easily attached to the exterior of the windows.

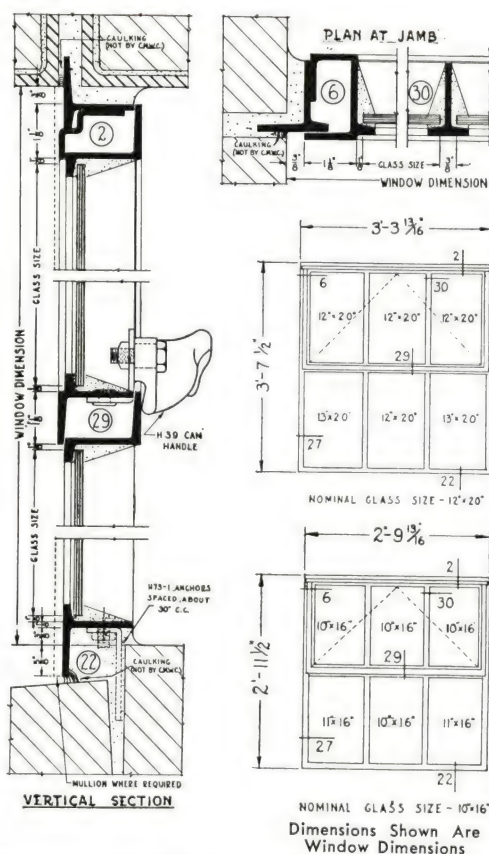


## UTILITY WINDOWS

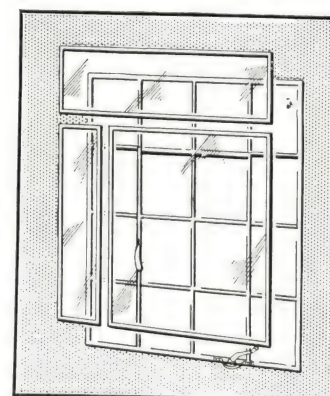


Campbell Utility Windows are adapted to the requirements of garages, basements, area ways and for openings where interior space requirements require ventilation at the top of the window.

Two sizes are carried in stock, one for nominal 10" x 16" glass, the other for nominal 12" x 20" glass, with the ventilator projected down-and-out. Up-and-in ventilators will be furnished on order for either type.



## WEATHER SASH



To reduce heat losses through the glass in Campbell Residence Casements, Weather Sash may be applied. They are attached to the windows in a manner similar to that used for removable screens. This application provides an air space between the casement and the weather sash which effectively insulates against heat losses by radiation.

Weather sash are furnished in two types—fixed type or with a hopper ventilator at the sill. They are made to fit certain types of Campbell Residence Casements. Consult the nearest sales representative for details.



## CAMPBELL CUSTOM CASEMENTS



Residence of Mr. & Mrs. Lawrence H. Kyte, Cincinnati, Ohio. John Henri Deeken, Architect

Campbell Custom Casements have been developed to meet the high standard of quality demanded in monumental buildings and fine homes in which the style of architecture leads to the selection of casement windows.

Sturdy sections, 1 7/16" deep, are the basis of the strength of these windows. Full 3/8" double weathering contact around all ventilators assures a weather-tight installation. The especially designed muntin members carry out the attractive flat exterior surface of Campbell Custom Casements.

Hardware has been designed to combine rugged strength with good appearance and is sufficiently varied to harmonize with interior treatment.

Three types of ventilator operation are available. The conventional, side-hinged type, with or without sidelights or transoms, answers most requirements for residential work. Projected ventilators, which may be opened in inclement weather and also offer draftless air control by means of hopper vents at the sill, are used in windows particularly adaptable to monumental and public buildings. Casement Combination, in



Entrance to Women's Dormitories, University of Colorado, Boulder, Colo.  
Chas. Z. Klauder, Architect. Wm. De Mourdant, Asst. Architect

which both side-hinged and projected ventilators (the latter usually at the sill) are used, are suitable for office buildings, hotels and schools.

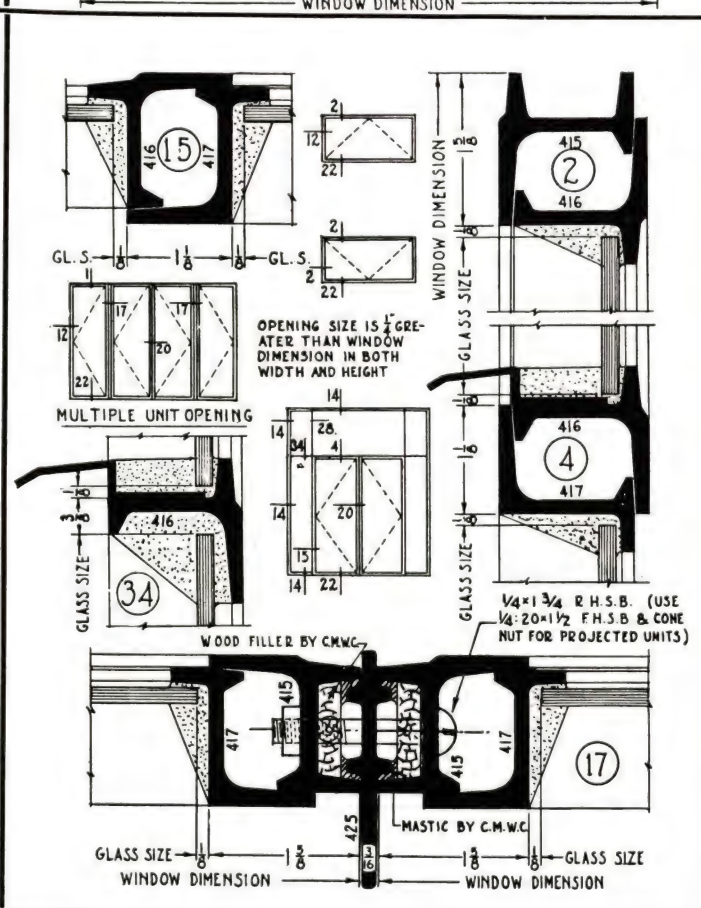
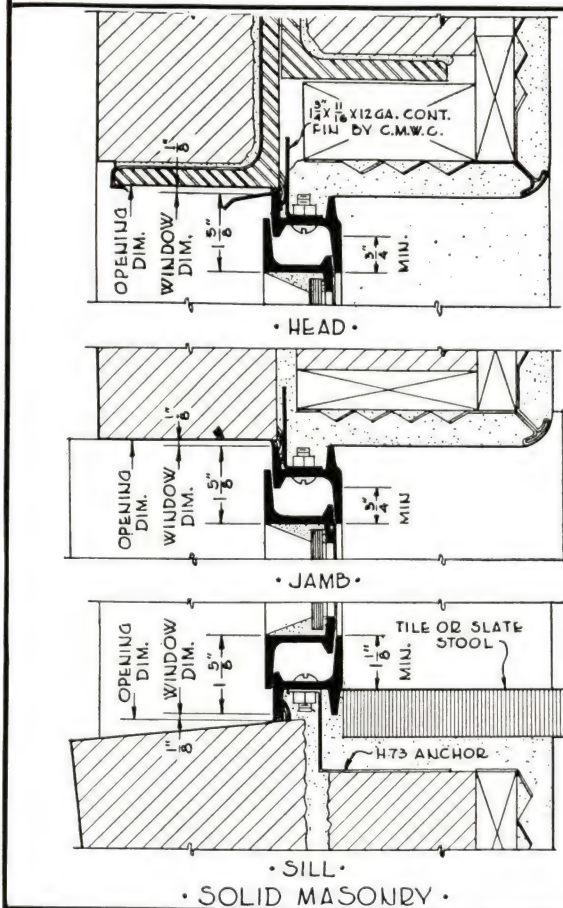
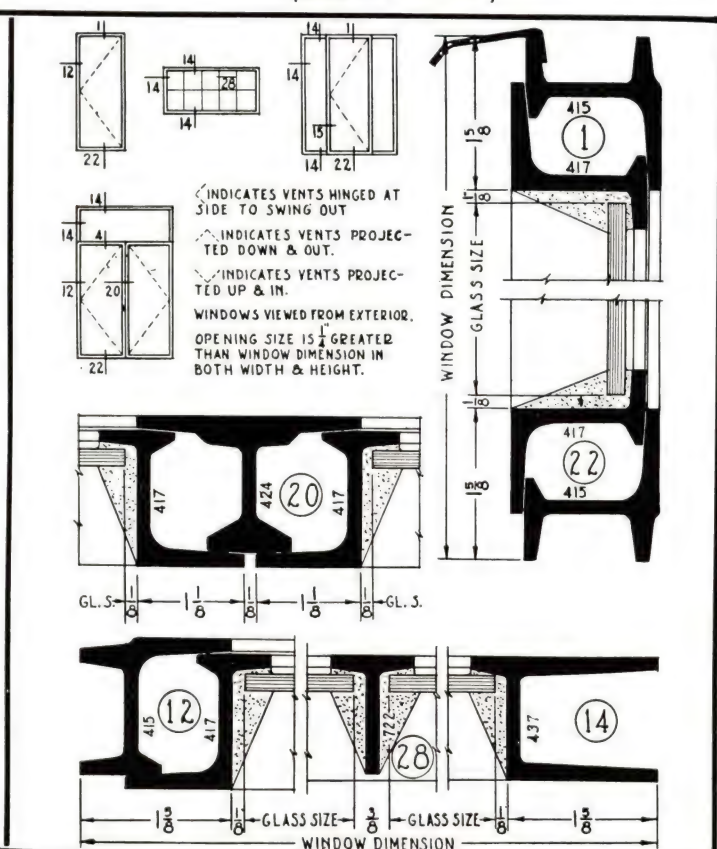
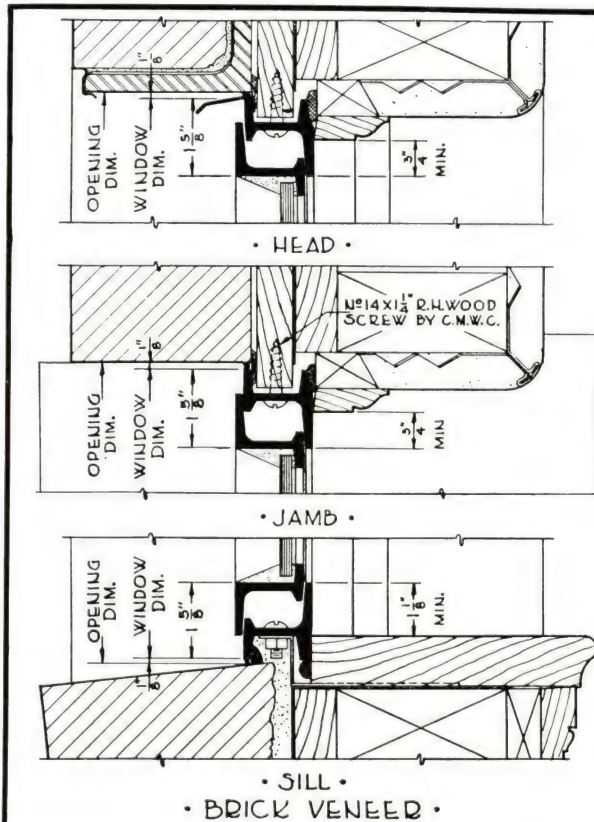
Campbell Custom Casements are built-to-order to meet the requirements of individual building design. Suggested sizes, shown on the following pages, offer a wide selection of windows which have been used most frequently. Within the size limits shown, these windows offer virtually unlimited variations which simplify the task of architects and builders.







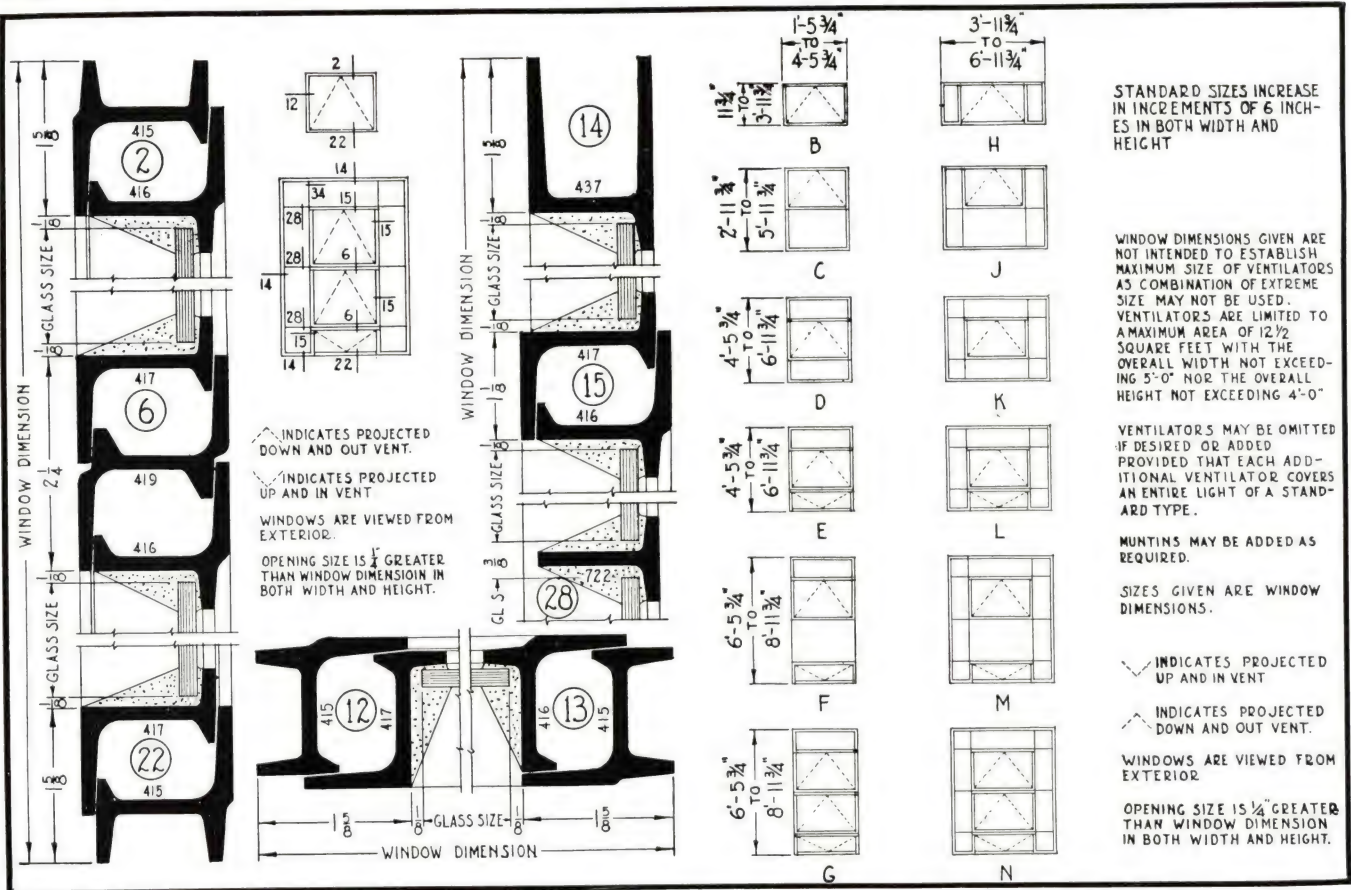
## CAMPBELL CUSTOM CASEMENTS

INSTALLATION DETAILS  
(Scale — 3" = 1' - 0")DETAILS SIDE HINGED TYPE  
(Scale — 6" = 1' - 0")

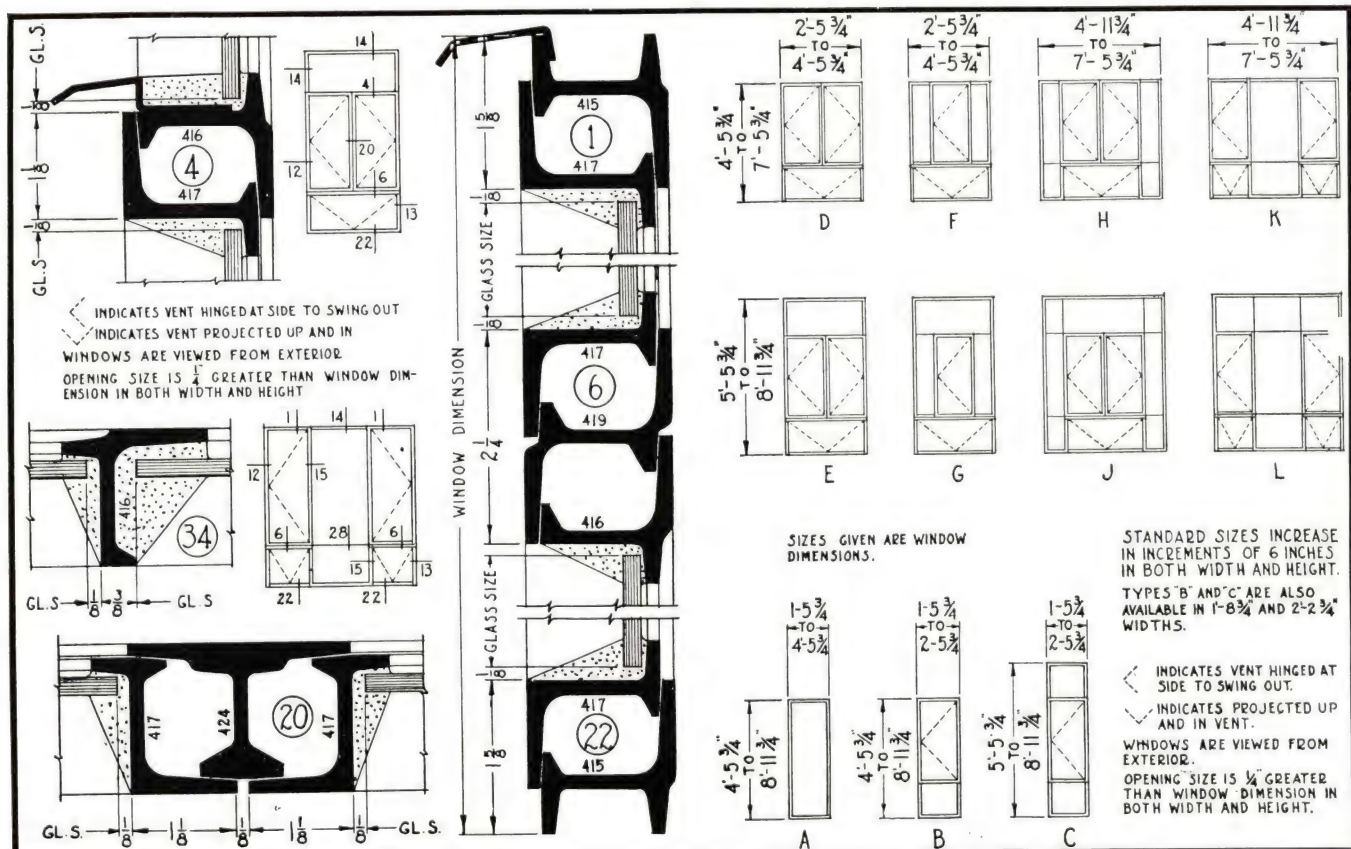


# CAMPBELL CUSTOM CASEMENTS

DETAILS - - - PROJECTED TYPE - - - TYPES AND SIZES - - - (SCALE OF DETAILS 6" = 1' - 0")



## DETAILS - - - CASEMENT COMBINATION - - - TYPES AND SIZES





# CAMPBELL CUSTOM CASEMENTS

## CONDENSED SPECIFICATIONS

### Specify

Side Hinged (or Projected or Combination) type Casement Windows manufactured by Campbell Metal Window Corporation of Baltimore, Md.

### Material

Members shall be solid section, one-piece, hot rolled, new billet steel shapes, not less than  $\frac{1}{8}$ " in scheduled thickness. They shall be especially designed with wide baffle legs and heavy fillets.

Drip members shall be formed of 16 gauge steel, electro-galvanized.

Fixed Light Frame Members shall be equal leg channel members not less than 1-5/16" deep.

Frame Members where vents occur shall be equal leg channel members not less than 1-7/16" deep.

Vent Members shall be Zee or Tee members not less than 1-7/16" deep.

Combined Weight of frame and vent members, exclusive of glazing beads, shall be not less than 3.55 pounds per lineal foot.

Muntins shall be especially designed Tee members, not less than 1 1/4" deep nor more than 7/8" across the face.

Mullions and Transom Bars provided between adjacent units set in the same opening shall be hot rolled steel members.

### Construction

The corners of Frames and Vents shall be accurately mitted or coped and welded, with exposed and contact surfaces ground smooth. The Meeting Rails and Stiles shall be tenoned, mortised and riveted to frame members. Frame and Vent Assemblies shall be true and square. Muntin intersections shall be coped flush and securely locked with a weld at the base of the stem.

Windows shall be designed for Glazing either (a) from the exterior with glass held in place by spring wire glazing clips, or (b) from the interior with glass held in place by continuous, hot rolled glazing beads neatly coped and fitted and attached with oval head bronze screws.

### Fins

Fins of 12 gauge steel shall be applied to the head and jambs of all windows not set in wood, stone or metal subframes.

### Hardware

Extension hinges shall be of steel with bronze bushed steel pins providing friction adjustment. Close up hinges shall be of steel, five knuckle, half surface, butt type.



CASEMENT INSTALLATION A.D. 1700

Projected vents shall be hung on sliding pivots with heavy compression springs and bronze shoes and balanced by two heavy steel supporting arms securely attached to frame and vent members with bronze pins. Fasteners shall be of solid bronze.

Underscreen Operators shall be of the gear type that will permit opening and closing of vents without removing screens. Operator arm and gear shall be machined from one piece of steel. A shoe attached to end of arm shall operate in a guide securely attached to under side of vent. Driving worm shall be constantly in mesh with not less than three teeth in ring gear. Crank handle shall be solid bronze. Arm, shoe and guide shall be cadmium plated. Housing shall be die cast zinc alloy, granodized and finished in dark gray enamel.

### Screens

Interior Flat Type Screens shall be 9/16" deep, attached to the window with steel clips.

Exterior Screens shall be 3/4" deep hung on pivots at each end of top rail and held in place by two spring bolts near the bottom.

Sliding Panel Screens shall be 1" deep, attached to the window with steel clips and shall have a built-in, vertically sliding screen panel located in center to provide access to vent locking device.

Screen frames shall be .037" thick cold rolled steel. Screen cloth shall be of .0113" diameter antique finish, bronze wire woven to 16 mesh and held in place with removable splines.

Screens shall be readily removable from the inside of the building.

Screen frames shall be given one shop coat of dark gray enamel, baked on.

### Finish

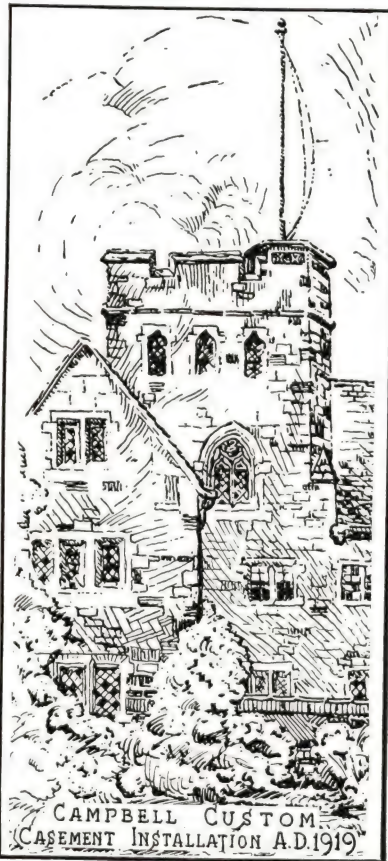
All windows shall be given one prime coat of gray rust resisting paint at the factory.

### Mastic

The window manufacturer shall supply one pound of mastic for each six lineal feet of window unit perimeter.



CASEMENT INSTALLATION A.D. 1470



CAMPBELL CUSTOM  
CASEMENT INSTALLATION A.D. 1919

## HARDWARE AND SCREEN TABLE

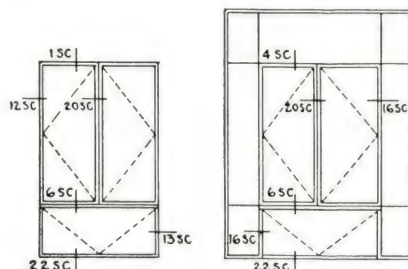
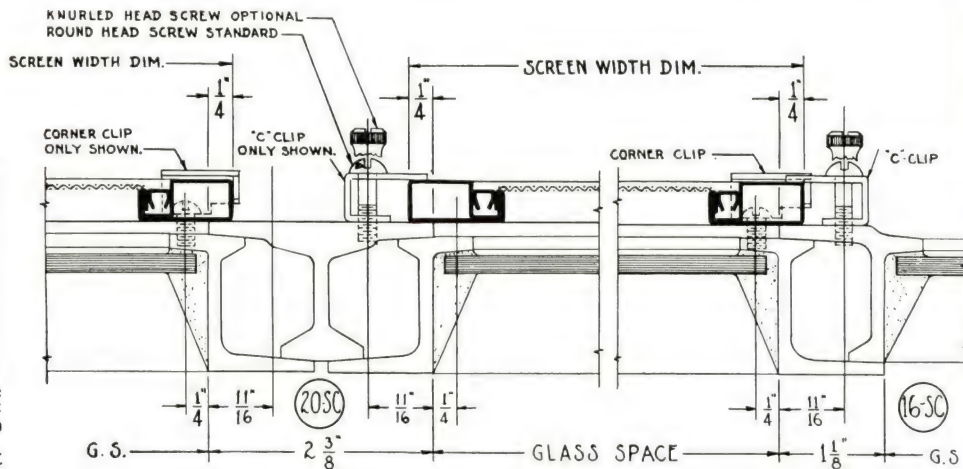
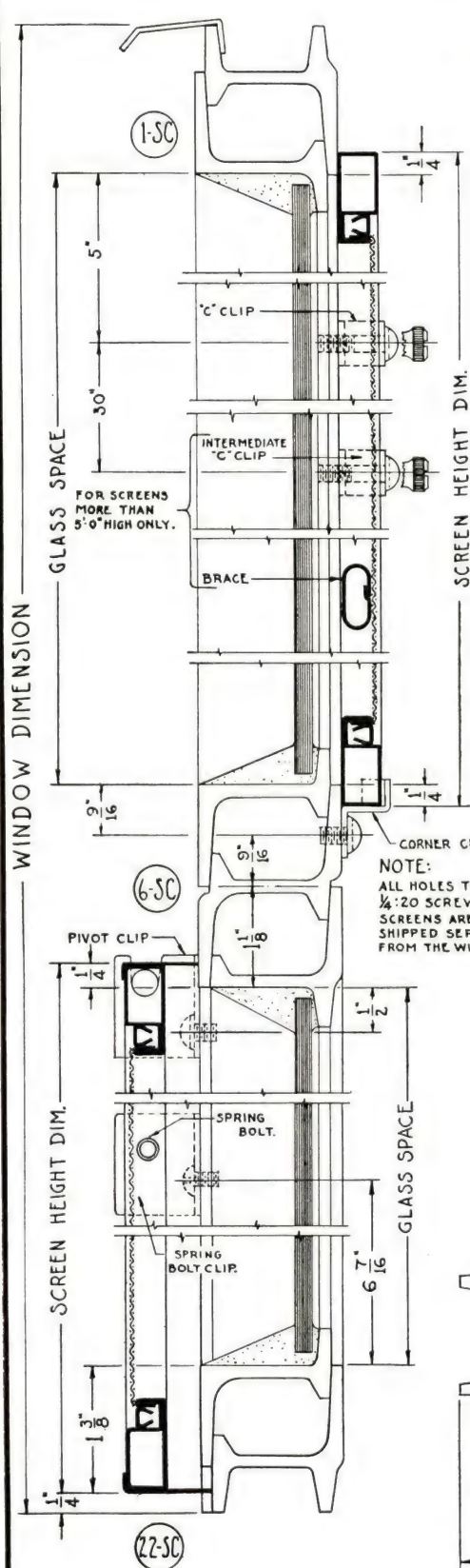
| TYPE OF VENT   | ROUGH HARDWARE  | FINISHED HARDWARE  | SCREENS   |
|--|---|--|---|
| Side Hinged<br>(Standard Type)                           | 2 Extension, Friction Hinges<br>per Vent  | Bronze Fastener and Strike   | None  |
| Side Hinged<br>(Folder Type<br>No Fixed Meeting<br>Rail) | 2 Extension, Friction Hinges<br>per Vent  | Bronze Fastener for Active<br>Leaf. Casement Shoot Bolts<br>at top and Bottom of In-<br>active Leaf. (Cremorne<br>Bolts and Finger pulls sub-<br>stituted at extra cost) | None  |
| Side Hinged<br>(With Underscreen<br>Operator)            | 2 Extension Hinges per<br>Vent. 3 per Vent over 5'0"<br>high.   | Underscreen Operator.<br>Bronze through-section type<br>vent Fastener and Keeper   | 1 Interior Flat Type Screen<br>per Vent             |
| Top Hinged<br>(Standard Type)                            | 2 Steel, Five Knuckle, half<br>surface, butt Hinges per<br>Vent   | Standard Peg Stay  | None  |
| Bottom Hinged  | 2 Steel, Five Knuckle, Half<br>Surface, Butt Hinges per<br>Vent   | Bronze Fastener or Ring<br>Catch and Friction Adjustor   | 1 Exterior Flat Type Screen<br>per Vent             |
| Projected Down<br>and Out                                | 2 Sliding Pivots with Com-<br>pression Springs and Bronze<br>Shoes. 2 Steel Arms at-<br>tached with Bronze Pins | Bronze Fastener and Pole<br>Ring<br>Omit Pole Ring when<br>screens are required)   | 1 sliding Panel Type or Box<br>Type Screen per Vent |
| Projected Up<br>and In                                   | 2 Sliding Pivots with Com-<br>pression Springs and Bronze<br>Shoes. 2 Steel Arms at-<br>tached with Bronze Pins | Bronze Fastener or Ring<br>Catch   | 1 Exterior Flat Type Screen<br>per Vent             |
| Horizontally<br>Pivoted                                  | 2 Bronze, Friction Pivots   | Bronze Fastener or Ring<br>Catch   | None  |
| Vertically<br>Pivoted                                    | 2 Bronze, Non-friction<br>Pivots  | Bronze Fastener Friction<br>Adjustor   | None  |

NOTE: Side hinged vents greater than 5'0" in height are equipped with 3 hinges per Vent and with duplex fasteners. Top or Bottom Hinged Vents greater than 4'0" in width are equipped with 3 hinges per Vent.

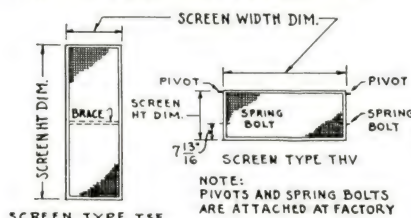


# CAMPBELL CUSTOM CASEMENTS

SCREENS — (SCALE OF DETAILS — 6" = 1' - 0")

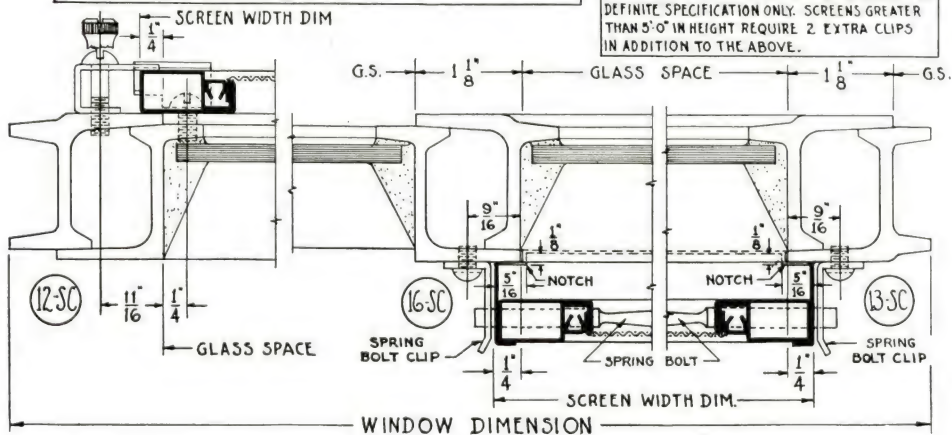


TYPICAL EXTERIOR ELEVATIONS



STANDARD SCREEN TYPES

**SPECIFICATION**  
STANDARD SCREENS ARE OF TUBULAR STEEL FRAME TYPE. RAILS & STILES ARE NOT LESS THAN 3/8" X 1", FORMED OF .028" THICK ELECTRO-GALVANIZED STEEL. CORNERS ARE MITRED & FITTED WITH HEAVY INTERNAL REINFORCEMENTS. FRAMES ARE REWIRABLE. SCREEN CLOTH 15 .0113" DIA. BRONZE WIRE, ANTIQUE FINISH, WOVEN TO 16 MESH. SCREEN FRAMES ARE GIVEN ONE SHOP COAT OF DARK GRAY ENAMEL, BAKED ON AT THE FACTORY. SCREENS MORE THAN 5'-0" IN HEIGHT TO BE FITTED WITH A NON-REWIRABLE BRACE, 3/8" X 3/4", AT 1/4 OF SCREEN HEIGHT DIMENSION.



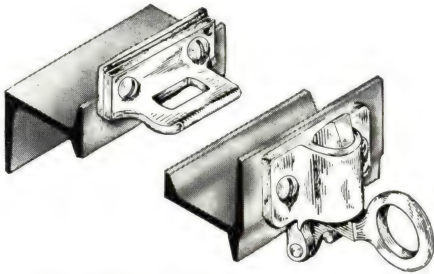
**FITTINGS -**  
**TYPE THV SCREENS**  
EACH TYPE THV SCREEN IS EQUIPPED WITH TWO FIXED PIVOTS & TWO SPRING BOLTS. THE FOLLOWING FITTINGS ARE PACKED SEPARATELY & FURNISHED FOR EACH SCREEN:-  
2 PIVOT CLIPS  
2 SPRING BOLT CLIPS

**FITTINGS**  
**TYPE TSF SCREENS**  
THE FOLLOWING FITTINGS ARE PACKED SEPARATELY & FURNISHED FOR EACH SCREEN:-  
2 CORNER CLIPS  
2 "C" CLIPS  
CLIPS MAY BE FURNISHED WITH KNURLED HEAD SCREWS IN LIEU OF ROUND HEAD SCREWS ON DEFINITE SPECIFICATION ONLY. SCREENS GREATER THAN 5'-0" IN HEIGHT REQUIRE 2 EXTRA CLIPS IN ADDITION TO THE ABOVE.

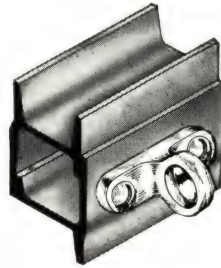


## CAMPBELL CUSTOM CASEMENT HARDWARE

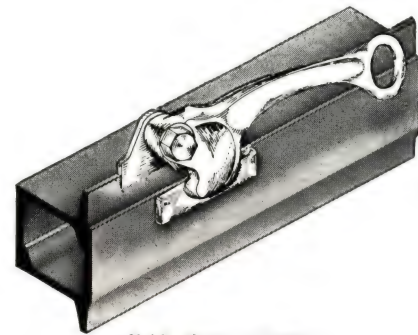
(SHOWN APPROXIMATELY ONE-THIRD FULL SIZE)



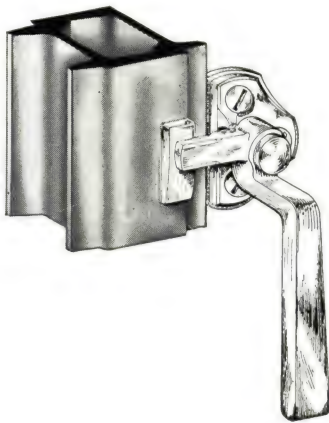
H-18 SPRING CATCH & KEEPER  
FOR UP & IN VENTS OUT OF REACH



H-66 POLE RING  
USED WITH H-19 CAM LATCH  
ON DOWN AND OUT VENTS



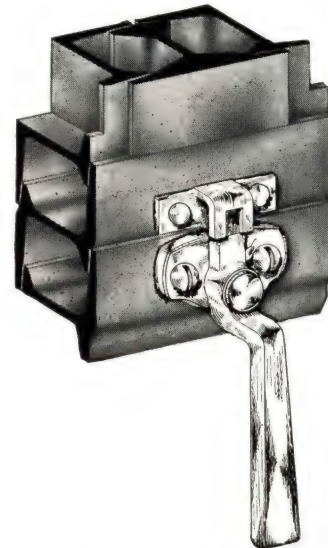
H-19 CAM LATCH  
FOR PROJECTED DOWN-AND-OUT VENTS



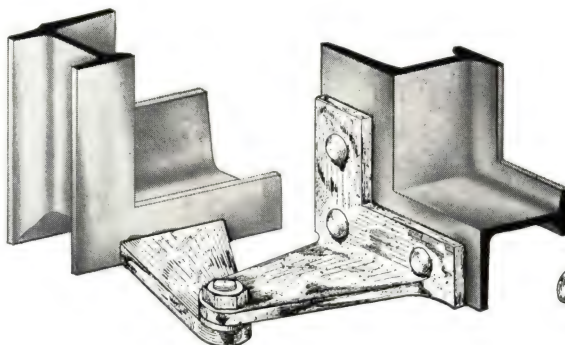
H-362 FASTENER  
FOR NON-SCREENED VENTS



H-273 THROUGH-SECTION FASTENER  
(USED WITH UNDERSCREEN OPERATOR)



H-368 FASTENER & KEEPER  
FOR HOPPER VENTS



EXTENSION HINGE  
FRICTION OR NON-FRICTION TYPE



H-271 UNDERSCREEN OPERATOR



# CAMPBELL ORNAMENTAL PROJECTED WINDOWS



Compania Columbiana  
de Seguros Building,  
Bogota, Columbia, S.A.

The Ornamental Projected Window is an exclusive Campbell design. It answers the demands of many architects for a *better window* of the projected type.

The window is fabricated from hot rolled members throughout. The frame section is 1½" deep and the vent section 1⅝" deep.

Wide baffle legs assure positive, flat contact between vents and frames.

The combined weight of frame and vent members is 4.66 lbs. per lineal foot.

Designers of fine buildings find the Ornamental Projected Windows meet their exacting requirements at a cost which, quality considered, represents a worthwhile saving over other types.

## CONDENSED SPECIFICATIONS

### Specify

Ornamental Projected Windows manufactured by Campbell Metal Window Corporation, Baltimore, Md.

### Material

Members shall be solid section hot rolled, new billet steel shapes, not less than ⅛" in scheduled thickness. Frame Members shall be unequal leg channel members not less than 1½" deep and providing not less than ¼" bearing against the adjacent building construction. Vent Members shall be especially designed shapes, not less than 1⅝" deep, incorporating integral baffle legs. THE COMBINED WEIGHT of Frame and Vent members shall be not less than 4.66 lbs. per lineal foot. Muntins shall be Tee members not less than 1½" deep and not less than ⅞" across the table.

### Construction

Joints of all abutting members shall be accurately coped, mortised, tenoned and air-hammer riveted. Corners of Frames and Vents shall be welded with exposed surfaces ground smooth. Muntins shall be continuous from head to sill and jamb except where vents occur. Muntins shall be coped flush and locked by a weld at the base of the stem at all intersections. Provide continuous, flat Weathering contact not less than 5/16" wide at baffle legs of ventilators. Ventilators shall be hung on sliding pivots having compression springs to equalize the friction between the bronze shoes and frame guides. They shall be balanced on two heavy steel arms which shall be securely riveted to frame and vent members with bronze rivets.

### Glazing Provision

Windows shall be designed for setting glass from the exterior. Glass shall be held in place with copper-plated steel wire glazing clips, not less than 4 per light.

### Hardware

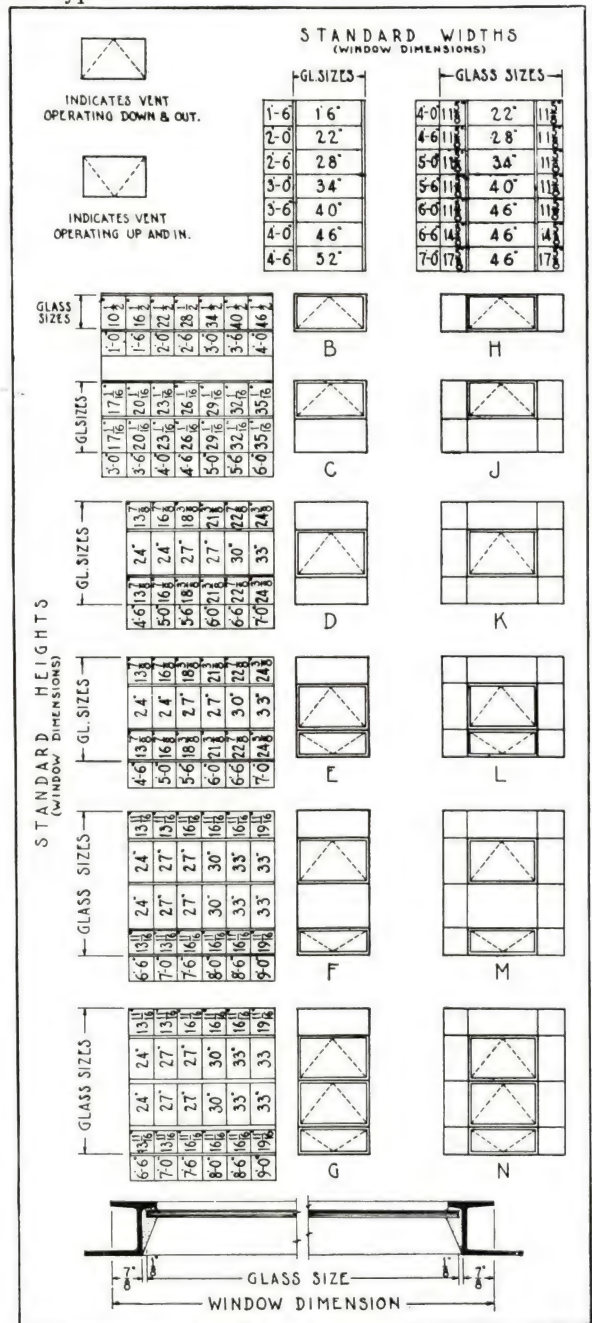
Down-and-Out Vents shall be equipped with a solid bronze cam handle, and solid bronze pole ring located at the top of the vent. Up-and-In Vents within reach of floor shall be equipped with a solid bronze, hand operated spring catch and keeper. All other Up-and-In Vents shall be equipped with a solid bronze, pole operated, ring catch and keeper.

### Screens

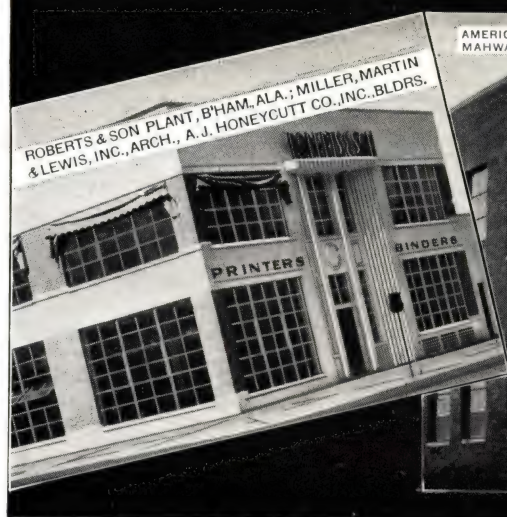
(See Architectural Projected Specifications—Page 35.)

### Shop Finish

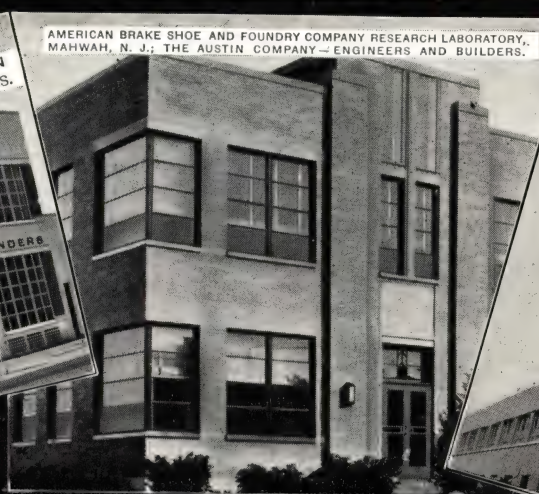
All windows and mullions shall be given one prime coat of red oxide paint at the factory.



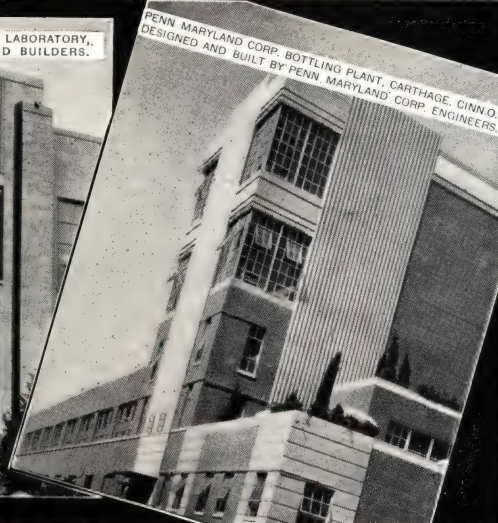




ROBERTS & SON PLANT, B'HAM. ALA.; MILLER, MARTIN & LEWIS, INC., ARCH., A. J. HONEYCUTT CO., INC., BLDRS.

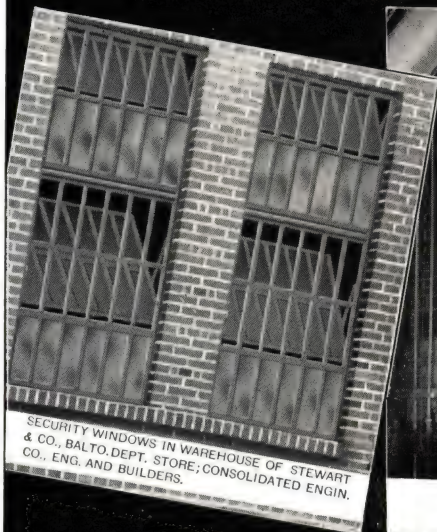


AMERICAN BRAKE SHOE AND FOUNDRY COMPANY RESEARCH LABORATORY, MAHWAH, N. J.; THE AUSTIN COMPANY—ENGINEERS AND BUILDERS.



PENN. MARYLAND CORP. BOTTLING PLANT, CARTHAGE, CINN. O. DESIGNED AND BUILT BY PENN. MARYLAND CORP. ENGINEERS.

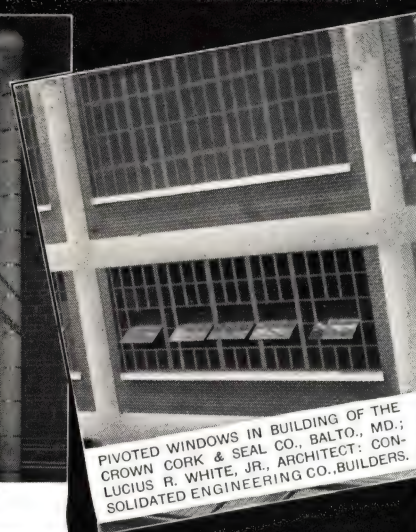
## CAMPBELL MAKES THE RIGHT WINDOW FOR EVERY TYPE OF INDUSTRIAL BUILDING



SECURITY WINDOWS IN WAREHOUSE OF STEWART & CO., BALTO. DEPT. STORE; CONSOLIDATED ENGIN. CO., ENG. AND BUILDERS.



INTERIOR OF BOILER HOUSE GUMMED PRODUCTS CO., TROY, O.; JOHN HENRI DEEKEN, ARCHITECT; THE GILLMORE—CARMICHAEL—OLSON CO.



PIVOTED WINDOWS IN BUILDING OF THE CROWN CORK & SEAL CO., BALTO., MD.; LUCIUS R. WHITE, JR., ARCHITECT; CONSOLIDATED ENGINEERING CO., BUILDERS.



AMERICAN BLOWER CORPORATION BUILDING, DETROIT, MICH.; ALBERT KAHN, INC., ARCHITECT;—O. W. BURKE CO., BUILDERS.





TYPE 44181. Exterior view.

## CONDENSED SPECIFICATIONS

### Specify

Campbell Industrial Pivoted and Fixed Windows manufactured by Campbell Metal Window Corp., Baltimore, Md.

### Material

Members shall be solid section, hot rolled, low carbon, open hearth steel bars not less than  $\frac{1}{8}$ " in scheduled thickness. Applied weathering shall be of formed steel not less than #12 U. S. Standard Gauge or of hot rolled angles.

### Construction

Frames shall be constructed of members not less than  $1\frac{1}{2}$ " deep. Abutting members shall be accurately coped, tenoned, mortised and air hammer riveted.

Ventilators shall be hung on heavy stamped steel pivots located at sides  $1\frac{15}{16}$ " above center. Pivot pins shall be STAINLESS STEEL, not less than  $\frac{3}{8}$ " in diameter.

Continuous Two-Point Contact shall be provided between vents and frames.

Muntins shall be Tee members, not less than  $1\frac{1}{2}$ " deep nor less than  $\frac{7}{8}$ " across table. They shall be continuous from jamb to jamb and from head to sill except where vents occur. Muntin intersections shall be coped flush and locked by a weld on the stem.

Glass Ledge shall be uniform and not less than  $\frac{3}{8}$ " high nor less than  $5/32$ " deep. Glass to be set from interior and to be held in place by copper plated steel wire clips.

Hardware. Vents located 6'-0" or less above the floor shall be equipped with a cam action, locking, painted steel Push Bar notched to hold vent open in several positions. Vents more than 6'-0" above floor shall be equipped with a Parkerized steel Spring Catch, Chain Operated.

Vertical Mullions. Shall be slotted to permit horizontal adjustment of windows.

### Shop Finish

Shall be one prime coat of red oxide paint applied at factory.

### Screens

Ring catch and keeper hardware shall be applied to all vents. Two complete screen frames shall be furnished for each vent. One frame shall be attached to the outside of window for upper half of vent, the other inside for lower half of vent, with curved contact plates at horizontal lines of pivot. Screen cloth shall be .0113" diameter, antique finish bronze wire, woven to 16 mesh and held in frames by removable splines.

### UNDERWRITERS LABELS

All rectangular types and sizes shown may be furnished with labels certifying approval of the Underwriters Laboratories. Labelled windows are equipped with glazing angles for glazing from interior.

# CAMPBELL PIVOTED WINDOWS

## TYPES AND SIZES

Sizes given are Window Dimensions. Window Opening sizes are identical. Windows are viewed from exterior.

## STOCK & STANDARD TYPES

| WIDTHS<br>12" GLASS<br>14" GLASS        | 21 3/8"<br>23 3/8" | 3'-2"<br>3'-8"   | 4'-2 3/8"<br>4'-10 3/8" | 5'-2 3/8"<br>6'-0 3/8" | 6'-3 3/8"<br>7'-3 3/8" |
|---|--------------------|------------------|-------------------------|------------------------|------------------------|
| 18" GL-3'-1 3/8"<br>20" GL-3'-5 3/8"    | *22140             | *32 *32160       | *42 42140 *42180        | *52 *52160             | 62180                  |
| 18" GL-4'-8"<br>20" GL-5'-2"            | *23141             | *33 *33161       | *43 43141 *43181        | 53 *53161              | 63181                  |
| 18" GL-6'-2 3/8"<br>20" GL-6'-10 3/8"   |                    | *34 *34161       | 44 44141 *44181         | 54 *54161              | 64181                  |
| 18" GL-7'-8 3/8"<br>20" GL-8'-6 3/8"    |                    | *35 *35161 35162 | 45 45141 *45181 45182   | 55 *55161 55162        | 65181                  |
| 18" GL-9'-3 3/8"<br>20" GL-10'-3 3/8"   |                    | 36 36161 362614  | 46 46141 46181 462814   | 56 56161 562614        |                        |
| 18" GL-10'-9 3/8"<br>20" GL-11'-11 3/8" |                    |                  | 47                      |                        | 572614                 |

## GLASS SIZES

Standard glass combinations are 12" x 18" and 14" x 20" only. 12" x 18" and 14" x 20" glass sizes refer to fixed lights only. Deduct 1" around perimeter of ventilators to obtain size of lights in movable portion.

INDICATES VENTILATOR HORIZONTALLY PIVOTED ABOVE CENTER.  
\* INDICATES COMMODITY STOCK TYPES AVAILABLE FOR IMMEDIATE SHIPMENT.

## LISTED SPECIAL TYPES

| WIDTHS<br>12" GLASS<br>14" GLASS        | 21 3/8"<br>23 3/8" | 3'-2"<br>3'-8" | 4'-2 3/8"<br>4'-10 3/8" | 5'-2 3/8"<br>6'-0 3/8" | 6'-3 3/8"<br>7'-3 3/8" |
|---|--------------------|----------------|-------------------------|------------------------|------------------------|
| 18" GL-1'-7 3/8"<br>20" GL-1'-9 3/8"    |                    | 31 31160       | 41 41160                | 51 51130               |                        |
| 18" GL-3'-1 3/8"<br>20" GL-3'-5 3/8"    |                    | 22             |                         |                        | 62                     |
| 18" GL-4'-8"<br>20" GL-5'-2"            |                    |                |                         |                        | 63                     |
| 18" GL-6'-2 3/8"<br>20" GL-6'-10 3/8"   | 24141              | 34162 34202    | 44182 442802            | 54162 542602           | 64 64182 642802        |
| 18" GL-7'-8 3/8"<br>20" GL-8'-6 3/8"    | 25141              | 35163 352603   | 45142 45183 452803      | 55163 552603           | 65 65182 65183 652803  |
| 18" GL-9'-3 3/8"<br>20" GL-10'-3 3/8"   |                    | 36163          | 46143 46214 46183       | 56163                  | 66 66181 66183 662814  |
| 18" GL-10'-9 3/8"<br>20" GL-11'-11 3/8" |                    | 37 37164 37164 | 47214 47181 47184       | 57161 57164 57         |                        |

## CAMBER TYPE

ALL GLASS SIZES TO TEMPLATE

|                       |                        |                        |                       |
|-----------------------|------------------------|------------------------|-----------------------|
|                       |                        |                        |                       |
| C-31                  | C-41                   | C-51                   | C-61                  |
| 12"X18" 14"X20"       | 12"X18" 14"X20"        | 12"X18" 14"X20"        | 12"X18" 14"X20"       |
| 3'-2" W 3'-8"         | 4'-2 3/8" W 4'-10 3/8" | 5'-2 3/8" W 6'-0 3/8"  | 6'-3 3/8" W 7'-3 3/8" |
| 1'-6 3/8" A 1'-8 3/8" | 1'-6 3/8" A 1'-8 3/8"  | 1'-6 3/8" A 1'-8 3/8"  | 1'-6 3/8" A 1'-8 3/8" |
| 1'-1" B 1'-2 3/8"     | 0'-11 3/8" B 1'-0 3/8" | 0'-9 3/8" B 0'-10 3/8" | 0'-8 3/8" B 0'-8 3/8" |
| 3'-2" R 3'-8"         | 4'-2 3/8" R 4'-10 3/8" | 5'-2 3/8" R 6'-0 3/8"  | 6'-3 3/8" R 7'-3 3/8" |

## SEMI-CIRCULAR TYPE

ALL GLASS SIZES TO TEMPLATE

|                 |                        |                       |                       |                        |                        |
|-----------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|
|                 |                        |                       |                       |                        |                        |
| S-32            | S-42                   | S-53                  | S-63                  | S-74                   | S-84                   |
| 12"X18" 14"X20" | 12"X18" 14"X20"        | 12"X18" 14"X20"       | 12"X18" 14"X20"       | 12"X18" 14"X20"        | 12"X18" 14"X20"        |
| 3'-2" W 3'-8"   | 4'-2 3/8" W 4'-10 3/8" | 5'-2 3/8" W 6'-0 3/8" | 6'-3 3/8" W 7'-3 3/8" | 7'-9 3/8" W 8'-11 3/8" | 8'-6 3/8" W 9'-10 3/8" |
| 1'-7" A 1'-10"  | 2'-1 3/8" A 2'-5 3/8"  | 2'-7 3/8" A 3'-0 3/8" | 3'-1 3/8" A 3'-7 3/8" | 3'-10 3/8" A 4'-5 3/8" | 4'-3 3/8" A 4'-11 3/8" |

HORIZONTAL MULLION TYPE 2 SEE DRAWING NO. 15



# CAMPBELL COMMERCIAL PROJECTED WINDOWS

## TYPES AND SIZES

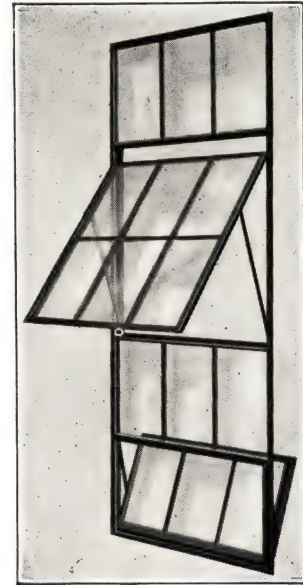
Sizes given below are window dimensions. Window opening sizes are identical. Windows are viewed from exterior.

Commercial Projected Windows are made of the same sturdy sections which give extra strength to the Pivoted Windows shown on Page 30, opposite.

They differ in the method of ventilator operation, hardware and screening. Commercial Projected Windows offer two types of ventilators. The Projected down-and-out ventilator extends outward when open, giving an "awning" effect that makes it possible to admit air while deflecting rain. The projected up-and-in ventilator is usually used at the sill for draftless air control.

The types and sizes shown below provide for inside putty glazing. Outside putty glazing can be furnished if desired.

Ventilators may be projected opposite to direction shown when so specified on order.



TYPE 3523602

View showing ventilators open, indicating "awning" rain protection feature of upper, down-and-out ventilator and draftless air control of the hopper vent (up-and-in) at the sill.

## CONDENSED SPECIFICATIONS

Specify—Commercial Projected Windows Manufactured by Campbell Metal Window Corp., Baltimore, Md.

USE SPECIFICATIONS OF PIVOTED WINDOWS, PAGE 30, OPPOSITE, SUBSTITUTING THE FOLLOWING THREE PARAGRAPHS FOR THOSE GIVEN:

### Ventilators

Shall be hung on sliding pivots having compression springs to equalize the friction between the bronze shoes and the frame guides. They shall be balanced on two, heavy, steel arms which shall be securely riveted to frame and ventilator members with bronze pins. Removable stops shall be provided to limit opening of Down-and-Out ventilators to approximately 40 degrees, Up-and-In ventilators to approximately 35 degrees.

### Hardware

Down-and-Out Ventilators shall be equipped with a malleable iron cam handle and pole ring. Up-and-In Ventilators, 1 light high and located at sill of window, shall be equipped with a malleable iron hand operated fastener. All other Up-and-In ventilators shall be equipped with a malleable iron ring catch and keeper. All hardware to be Parkerized and given an oil finish.

### Screens

Down-and-Out ventilators shall be provided with an extension box and screen, hinged at top of box to swing in at bottom. Screens for Up-and-In ventilators shall be attached to outside face of windows and shall be removable from inside of building. Screen cloth shall be .0113" diameter antique finish bronze wire, woven to 16 mesh and held in frames by removable splines.

### Underwriters Labels

All types and sizes shown may be furnished with labels certifying approval of the Underwriters Laboratories. Labelled windows are equipped with glazing angles for glazing from interior.

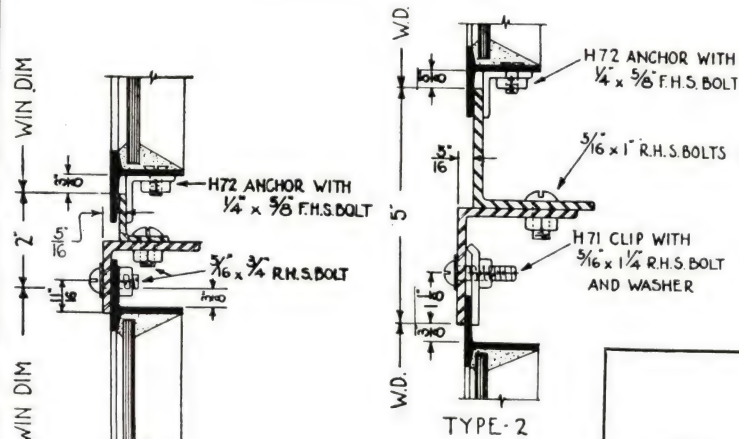
|         |   | STOCK & STANDARD TYPES.  |                |                         |                        |
|---------|---|--|----------------|-------------------------|------------------------|
|         |   | WIDTHS<br>12" GLASS<br>14" GLASS   | 3'-2"<br>3'-8" | 4'-2 3/8"<br>4'-10 3/8" | 5'-2 3/4"<br>6'-0 3/4" |
| HEIGHTS | 18" GL 3'-1 3/8"<br>20" GL 3'-5 3/8"    | 22140  | 32160          | 42140                   | 52160                  |
|         | 18" GL 4'-8"<br>20" GL 5'-2"            | 23141  | 33161          | 43141                   | 53161                  |
|         | 18" GL 6'-2 3/8"<br>20" GL 6'-10 3/8"   | 34161  | 3423602        | 44141                   | 4422402                |
|         | 18" GL 7'-8 3/4"<br>20" GL 8'-6 3/4"    | 35161  | 35162          | 45141                   | 4522402                |
|         | 18" GL 9'-3 3/8"<br>20" GL 10'-3 3/8"   | 36161  | 362614         | 46141                   | 4622403                |
|         | 18" GL 10'-9 1/2"<br>20" GL 11'-11 1/2" | 372614   |                | 56161                   | 562614                 |
|         |   | * INDICATES COMMUNITY STOCK TYPES AVAILABLE FOR IMMEDIATE SHIPMENT.<br>□ INDICATES VENTILATOR PROJECTED DOWN & OUT.<br>□ INDICATES VENTILATOR PROJECTED UP & IN. |                |                         |                        |
|         |   | LISTED SPECIAL TYPES   |                |                         |                        |
|         |   | WIDTHS<br>12" GLASS<br>14" GLASS   | 3'-2"<br>3'-8" | 4'-2 3/8"<br>4'-10 3/8" | 5'-2 3/4"<br>6'-0 3/4" |
| HEIGHTS | 18" GL 1'-7 1/4"<br>20" GL 1'-9 1/4"    | 21120  | 31130          | 41120                   | 51130                  |
|         | 18" GL 6'-2 3/8"<br>20" GL 6'-10 3/8"   | 24141  | 34162          |                         | 54162                  |
|         | 18" GL 7'-8 3/4"<br>20" GL 8'-6 3/4"    | 25141  | 35163          | 45142                   | 55163                  |
|         | 18" GL 9'-3 3/8"<br>20" GL 10'-3 3/8"   | 36163  | 362603         | 46143                   | 562603                 |
|         | 18" GL 10'-9 1/2"<br>20" GL 11'-11 1/2" | 37161  | 37164          | 472414                  | 57161                  |
|         |   |  | 3723604        |                         | 5723604                |

Glass Sizes—Standard glass combinations are 12" x 18" and 14" x 20" only. 12" x 18" and 14" x 20" glass size refer to fixed lights only. Deduct 1" around perimeter of ventilators to obtain size of lights in movable portion.



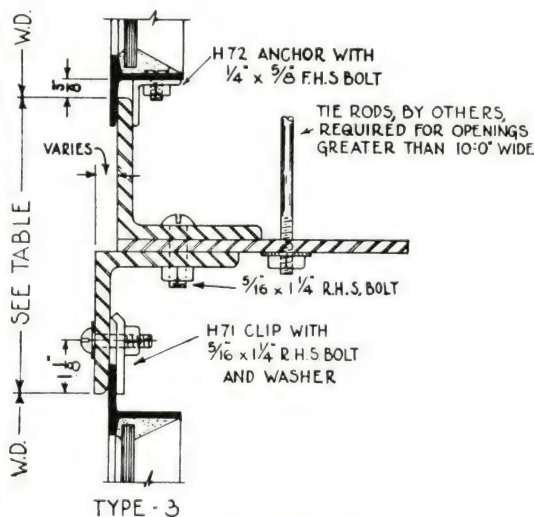
# CAMPBELL PIVOTED AND COMMERCIAL PROJECTED WINDOWS COMBINATION OPENINGS (SCALE OF DETAILS 3"=1'0")

## HORIZONTAL MULLIONS

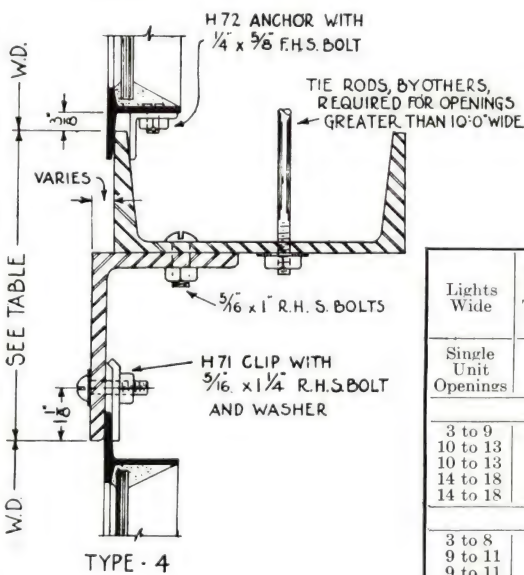


TYPE 1

TYPE 2



TYPE 3



TYPE 4

## SYMMETRICAL COMBINATIONS

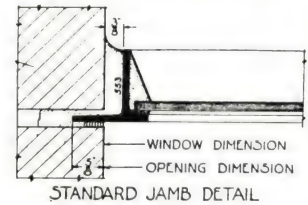
| OPENING DIMENSIONS |             |
|--------------------|-------------|
| 18" HEIGHTS        |             |
| Lights             | Dim.        |
| 2                  | 3'-1 1/8"   |
| 3                  | 4'-8"       |
| 4                  | 6'-2 3/8"   |
| 5                  | 7'-8 3/8"   |
| 6                  | 9'-3 1/8"   |
| 7                  | 10'-9 1/2"  |
| 20" HEIGHTS        |             |
| Lights             | Dim.        |
| 2                  | 3'-5 5/8"   |
| 3                  | 5'-2"       |
| 4                  | 6'-10 3/8"  |
| 5                  | 8'-6 3/4"   |
| 6                  | 10'-3 1/8"  |
| 7                  | 11'-11 1/2" |

| OPENING DIMENSIONS |             | NO. UNITS IN OPENING |                       | ARRANGEMENT OF UNITS IN OPENING                             |  |
|--------------------|-------------|----------------------|-----------------------|---|--|
| 12" Widths         | 14" Widths  | NO. UNITS IN OPENING | NO. LIGHTS IN OPENING | Figures Indicate the Number of Lights in Width of Each Unit |  |
| 2'-1 1/8"          | 2'-5 5/8"   | 1                    | 2                     | 2   |  |
| 3'-2"              | 3'-8"       | 1                    | 3                     | 3   |  |
| 4'-2 3/8"          | 4'-10 3/8"  | 1                    | 4                     | 4   |  |
| 4'-5 1/4"          | 5'-1 1/4"   | 2                    | 5                     | 2, 2  |  |
| 5'-2 3/8"          | 6'-0 3/4"   | 1                    | 5                     | 5   |  |
| 6'-3 1/8"          | 7'-3 1/8"   | 1                    | 6                     | 6   |  |
| 6'-6"              | 7'-6"       | 2                    | 6                     | 3, 3  |  |
| 8'-6 3/8"          | 9'-10 3/8"  | 2                    | 8                     | 4, 4  |  |
| 9'-10"             | 11'-4"      | 3                    | 9                     | 3, 3, 3   |  |
| 10'-7 1/4"         | 12'-3 1/2"  | 3                    | 10                    | 5, 5  |  |
| 10'-10 3/8"        | 12'-6 3/8"  | 3                    | 10                    | 3, 4, 3   |  |
| 11'-10 3/8"        | 13'-8 3/4"  | 3                    | 11                    | 3, 5, 3   |  |
| 11'-10 3/8"        | 13'-8 3/4"  | 3                    | 11                    | 4, 3, 4   |  |
| 12'-8 1/4"         | 14'-8 1/4"  | 2                    | 12                    | 6, 6  |  |
| 12'-11 1/8"        | 14'-11 1/8" | 3                    | 12                    | 4, 4, 4   |  |
| 13'-2"             | 15'-2"      | 4                    | 12                    | 3, 3, 3, 3  |  |
| 13'-11 1/4"        | 16'-1 1/2"  | 3                    | 13                    | 4, 5, 4   |  |
| 13'-11 1/4"        | 16'-1 1/2"  | 3                    | 13                    | 5, 3, 5   |  |
| 14'-11 1/4"        | 17'-3 3/8"  | 3                    | 14                    | 4, 6, 4   |  |
| 14'-11 1/4"        | 17'-3 3/8"  | 3                    | 14                    | 5, 4, 5   |  |
| 15'-2 3/8"         | 17'-6 3/4"  | 4                    | 14                    | 3, 4, 4, 3  |  |
| 16'-0 1/4"         | 18'-6 1/4"  | 3                    | 15                    | 5, 5, 5   |  |
| 16'-0 1/4"         | 18'-6 1/4"  | 3                    | 15                    | 6, 3, 6   |  |
| 16'-6"             | 19'-0"      | 5                    | 15                    | 3, 3, 3, 3, 3   |  |
| 17'-0 3/8"         | 19'-8 3/8"  | 3                    | 16                    | 5, 6, 5   |  |
| 17'-0 3/8"         | 19'-8 3/8"  | 3                    | 16                    | 6, 4, 6   |  |
| 17'-3 1/4"         | 19'-11 1/2" | 4                    | 16                    | 4, 4, 4, 4  |  |
| 17'-3 1/4"         | 19'-11 1/2" | 4                    | 16                    | 3, 5, 5, 3  |  |
| 17'-6 3/8"         | 20'-2 3/8"  | 5                    | 16                    | 3, 3, 4, 3, 3   |  |
| 18'-1"             | 20'-11"     | 3                    | 17                    | 6, 5, 6   |  |
| 18'-6 3/8"         | 21'-4 3/4"  | 5                    | 17                    | 3, 4, 3, 4, 3   |  |
| 19'-1 3/8"         | 22'-1 3/8"  | 3                    | 18                    | 6, 6, 6   |  |
| 19'-4 1/4"         | 22'-4 1/4"  | 4                    | 18                    | 3, 6, 6, 3  |  |
| 19'-4 1/4"         | 22'-4 1/4"  | 4                    | 18                    | 4, 5, 5, 4  |  |
| 19'-7 1/8"         | 22'-7 1/8"  | 5                    | 18                    | 3, 4, 4, 4, 3   |  |
| 20'-7 1/8"         | 23'-9 1/2"  | 5                    | 19                    | 3, 5, 3, 5, 3   |  |
| 21'-5"             | 24'-9"      | 4                    | 20                    | 5, 5, 5, 5  |  |
| 21'-5"             | 24'-9"      | 4                    | 20                    | 4, 6, 6, 4  |  |
| 21'-7 1/8"         | 24'-11 1/8" | 5                    | 20                    | 4, 4, 4, 4, 4   |  |
| 21'-10 3/4"        | 25'-2 3/4"  | 6                    | 20                    | 3, 3, 4, 4, 3, 3  |  |

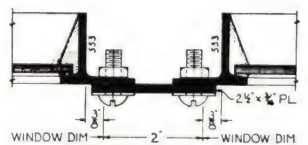
## HORIZONTAL MULLION TYPES

| Lights Wide          | Mullion Type No. | ANGLES |   | Plate or Channel        | Estimated Weight of Mull per Ft | Between Window Dimensions |
|----------------------|------------------|--------|---|-------------------------|---------------------------------|---------------------------|
|                      |                  | Req'd  | Size  |                         |                                 |                           |
| Single Unit Openings | 1                | 1      | 1"x1"x $\frac{1}{8}$ "                                | None                    | 3.0 lbs.                        | 2"                        |
|                      |                  | 1      | 2"x1 $\frac{1}{2}$ "x $\frac{3}{16}$ "                |                         |                                 |                           |
| 12" x 18" SIZE GLASS |                  |        |   |                         |                                 |                           |
| 3 to 9               | 2                | 2      | 2 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{3}{16}$ " | None                    | 6.2 lbs.                        | 5"                        |
| 10 to 13             | 3                | 2      | 2 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{3}{16}$ " | 6"x $\frac{1}{4}$ " Plt | 11.3 lbs.                       | 5 $\frac{1}{4}$ "         |
| 10 to 13             | 4                | 1      | 3 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{1}{4}$ "  | 4"Channel               | 10.0 lbs.                       | 5 $\frac{1}{4}$ "         |
| 14 to 18             | 3                | 2      | 3"x3"x $\frac{3}{16}$ "                               | 6"x $\frac{1}{4}$ " Plt | 17.2 lbs.                       | 6 $\frac{1}{8}$ "         |
| 14 to 18             | 4                | 1      | 4"x3"x $\frac{3}{16}$ "                               | 6"Channel               | 15.4 lbs.                       | 6 $\frac{1}{8}$ "         |
| 14" x 20" SIZE GLASS |                  |        |   |                         |                                 |                           |
| 3 to 8               | 2                | 2      | 2 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{3}{16}$ " | None                    | 6.2 lbs.                        | 5"                        |
| 9 to 11              | 3                | 2      | 2 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{3}{16}$ " | 6"x $\frac{1}{4}$ " Plt | 11.3 lbs.                       | 5 $\frac{1}{4}$ "         |
| 9 to 11              | 4                | 1      | 3 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x $\frac{1}{4}$ "  | 4"Channel               | 10.0 lbs.                       | 5 $\frac{1}{4}$ "         |
| 12 to 16             | 3                | 2      | 3"x3"x $\frac{3}{16}$ "                               | 6"x $\frac{1}{4}$ " Plt | 17.2 lbs.                       | 6 $\frac{1}{8}$ "         |
| 12 to 16             | 4                | 1      | 4"x3"x $\frac{3}{16}$ "                               | 6"Channel               | 15.4 lbs.                       | 6 $\frac{1}{8}$ "         |

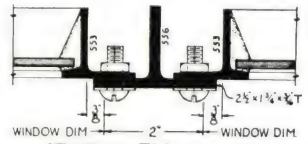
## VERTICAL MULLIONS



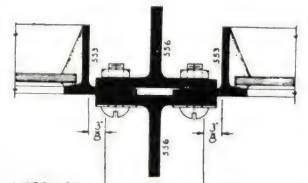
STANDARD JAMB DETAIL



STANDARD PLATE MULLION FOR HEIGHTS NOT EXCEEDING 3'-6"

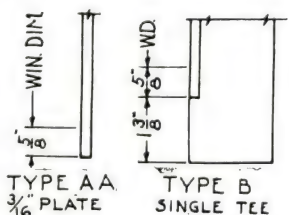


STANDARD TEE MULLION FOR HEIGHTS NOT EXCEEDING 10'-6"



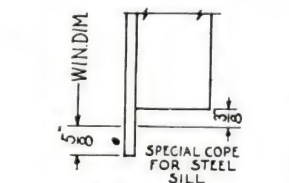
STANDARD DOUBLE TEE MULLION FOR HEIGHTS GREATER THAN 10'-6"

## SILL CONDITIONS

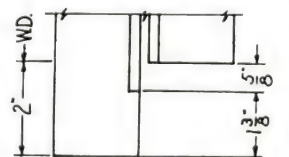


TYPE AA 3/16 PLATE

TYPE B SINGLE TEE



TYPE BA SINGLE TEE

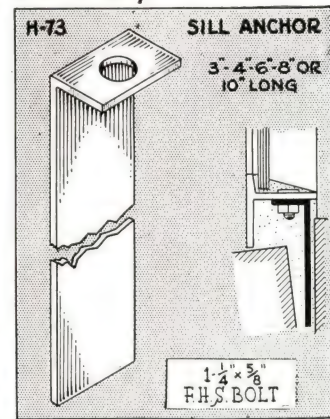
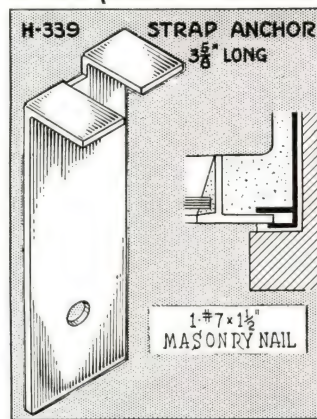
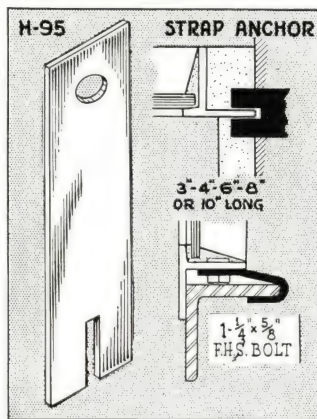
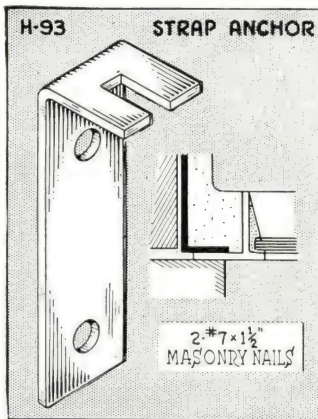


TYPE BB DOUBLE TEE



# CAMPBELL INDUSTRIAL WINDOWS

## INSTALLATION DETAILS AND FITTINGS (Scale of Details—3"=1'-0")

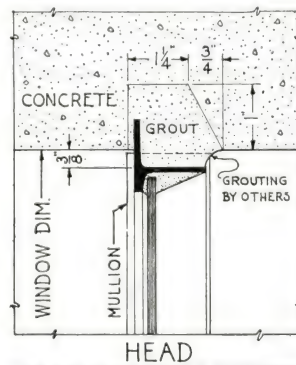
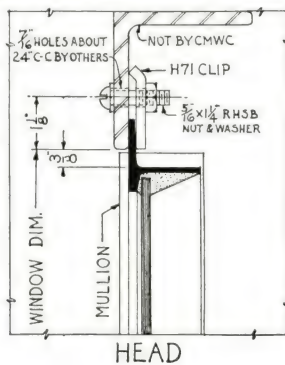
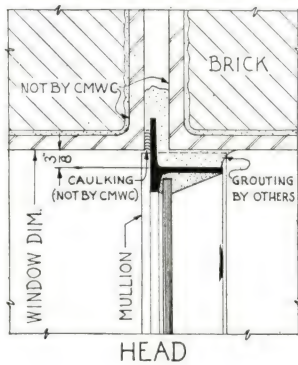


### INSTALLATION DETAILS

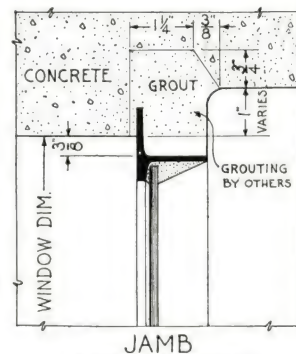
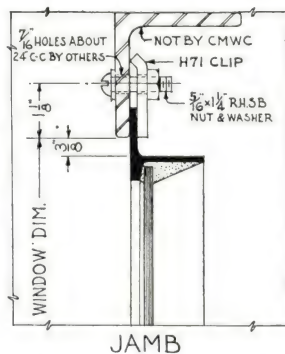
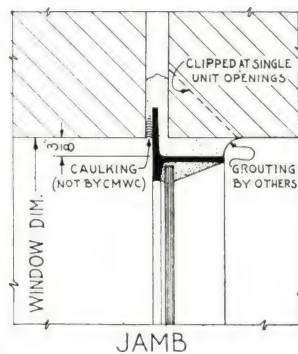
THREE TYPICAL BUILDING CONDITIONS ARE SHOWN BELOW. THESE COVER A LARGE PROPORTION OF THE OPENINGS FOR WHICH PIVOTED AND COMMERCIAL PROJECTED WINDOWS ARE USED. CORRUGATED IRON SIDING, FOR INSTANCE, REQUIRES STEEL FRAME WORK WHICH MAKES THE WINDOW INSTALLATION PROCEDURE SIMILAR TO THE STEEL DETAILS SHOWN BELOW.

ABOVE & TO THE RIGHT ARE SHOWN THE INSTALLATION FITTINGS WHICH

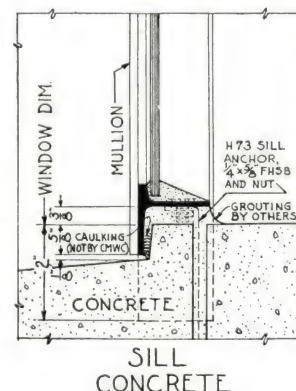
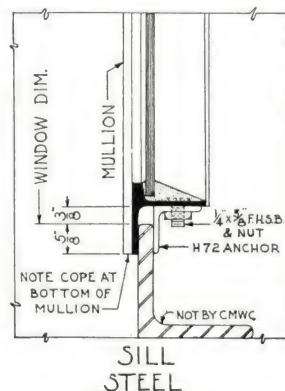
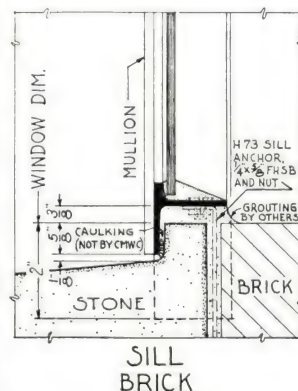
ARE FURNISHED, AS REQUIRED, WITH THE WINDOWS. CLIP H-71, ANCHOR H-72 AND SILL ANCHOR H-73 WILL TAKE CARE OF MOST CONDITIONS. THE H-74 HOOK BOLT AND THREE TYPES OF STRAP ANCHORS FURNISHED IN SEVERAL LENGTHS AS REQUIRED ARE ALSO AVAILABLE. A SMALL DETAIL SKETCH IS INCLUDED TO INDICATE AN APPLICATION OF EACH



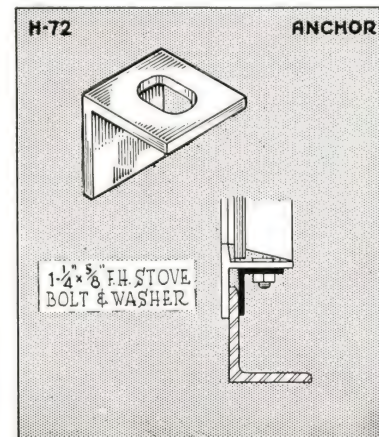
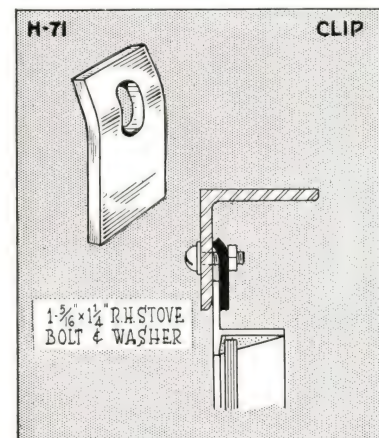
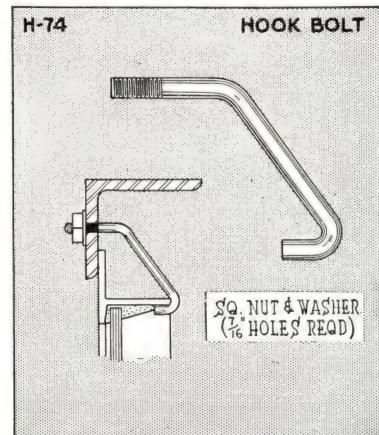
JAMB SIMILAR FOR MULTIPLE UNIT OPENINGS



SINGLE UNIT OPENINGS



SCALE 3"=1'-0"









# CAMPBELL ARCHITECTURAL PROJECTED WINDOWS

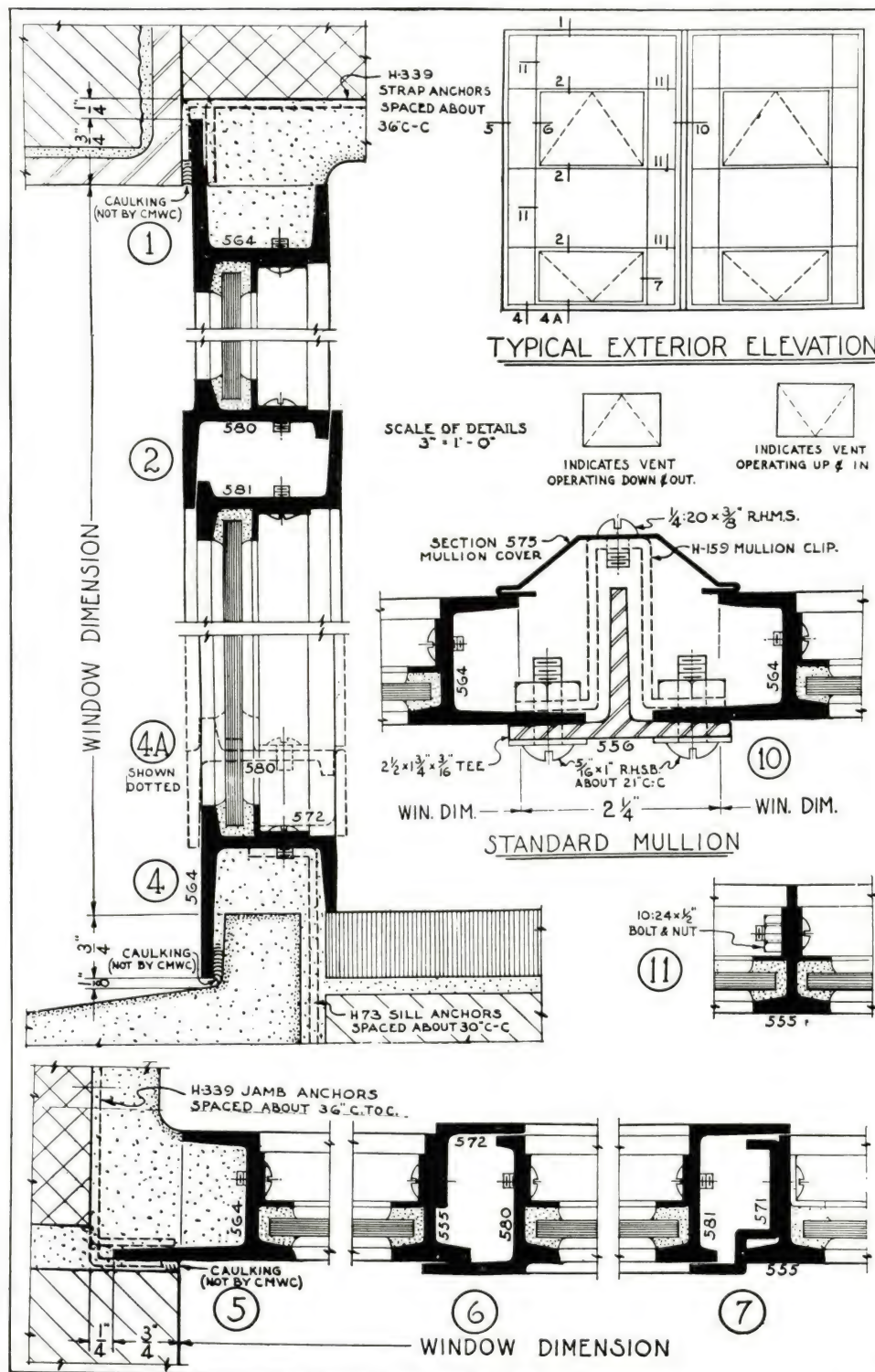
## TYPICAL DETAILS—(Scale 6"=1'-0")

The details shown below are for the inside angle glazed type of window which is standard.

The window may be built for outside putty glazing when required. Sight lines may be added where specified at slight additional cost.

In addition to the standard mullion shown, an alternate mullion of the double plate type is available for use in openings not exceeding 10' 6" in height.

Standard corner mullions can also be supplied where the windows are used with the cantilever type of floor construction.



## CONDENSED SPECIFICATIONS

### Specify

Architectural Projected Windows manufactured by the Campbell Metal Window Corporation, Baltimore, Md.

### Material

Members shall be solid section hot rolled new billet steel shapes not less than 1/8" in scheduled thickness. They shall be specially designed with wide baffle legs rolled integrally with the ventilator members. Applied weathering shall be of formed low carbon steel not less than #12 U. S. Standard Gauge or hot rolled angles.

Frame Members shall be unequal leg channel members not less than 1 1/2" deep and providing not less than 3/4" bearing against the adjacent building construction.

Ventilator Members shall be specially designed shapes incorporating integral baffle legs and not less than 1 1/8" deep.

Glass Ledges shall be not less than 3/8" high nor less than 5/32" thick.

Muntins shall be especially designed Tee members not less than 1 1/2" deep and not less than 7/8" across the table.

### Construction

Corners of Frames and Vents shall be solidly welded with the exposed surfaces ground smooth. The joints of abutting members shall be accurately coped, mortised, tenoned and air hommer riveted. Continuous two point flat contact Weathering not less than 5/16" wide shall be provided at baffle legs of ventilators. Windows are to be designed for Glazing from the interior using 5/8" x 3/8" x 16 gauge steel continuous glazing angles applied with galvanized steel bolts and nuts. (Alternate glazing from the exterior, if specified, shall be with copper-plated steel wire glazing clips not less than four per light.) Ventilators shall be hung on sliding pivots having compression springs to equalize the friction between the bronze shoes and frame guides. They shall be balanced on two heavy steel arms which shall be securely riveted to the frames and ventilator members with bronze pins.

### Hardware

Down-and-Out ventilators shall be equipped with a solid bronze cam handle, and a solid bronze pole ring. Up-and-In ventilators located within reach from the floor shall be equipped with solid bronze, hand operated spring catch and keeper. All other Up-and-In ventilators shall be equipped with solid bronze, pole operated ring catch and keeper.

### Screens

Windows shall be prepared to receive insect screens.

Screens for Projected Down-and-Out ventilators shall be (a) of the close-up flat type. Each screen fitted with a built-in vertically sliding screen panel located in the center to provide access to the ventilator locking device, or (b) shall be of the top hinged type with extension box of sufficient depth to clear the ventilator locking device.

Screens for Projected Up-and-In ventilators shall be attached to the outside face of the windows and shall be removable from the inside of the building.

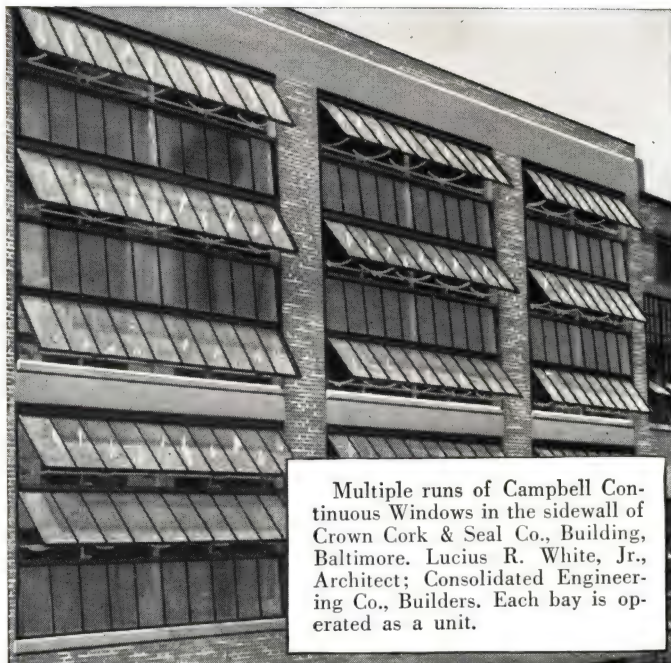
### Painting

All windows shall be given one prime coat of red oxide paint at the factory.



## CAMPBELL CONTINUOUS WINDOWS

### MECHANICAL OPERATORS FOR INDUSTRIAL WINDOWS



Multiple runs of Campbell Continuous Windows in the sidewall of Crown Cork & Seal Co., Building, Baltimore. Lucius R. White, Jr., Architect; Consolidated Engineering Co., Builders. Each bay is operated as a unit.



Top hung Continuous Windows installed in a monitor, showing Rack and Pinion Operator, motor driven. This type of installation permits control of roof ventilation by means of a switch located at the floor level.

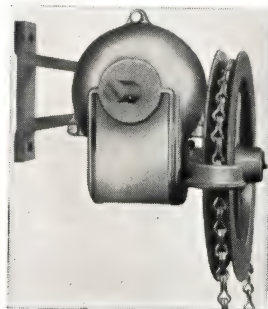


Three rows of ventilators in Campbell Commercial Projected Windows are operated as a unit, by a single hand power, in this arrangement of Campbell Rack and Pinion Operator.

(At Right) An enclosed type Hand Power for the Rack and Pinion Operator is shown as used with a hand chain. This Power is usually used for operating vents which are out of reach. For vents within reach of the floor a similar Power may be supplied with Hand Wheel operation.



This close-up of the Rack and Pinion Operator shows a convex arm attached to the sill of a Campbell Pivoted Window ventilator. Where clearances demand it, a concave arm may be attached to the head of the ventilator.



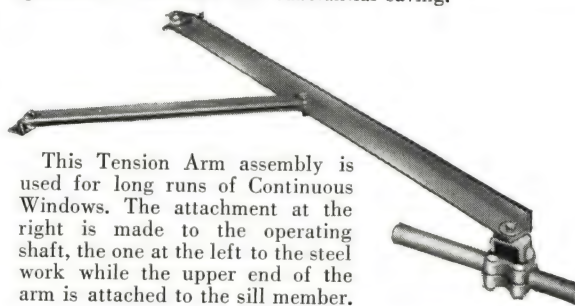
### CAMPBELL CONTINUOUS WINDOWS

The use of Continuous Windows in roofs or sidewalls is essentially a subject for engineering survey. A steel layout designed for windows of standard size is an obvious economy and Campbell Engineers are in a position to give valuable assistance in this matter.

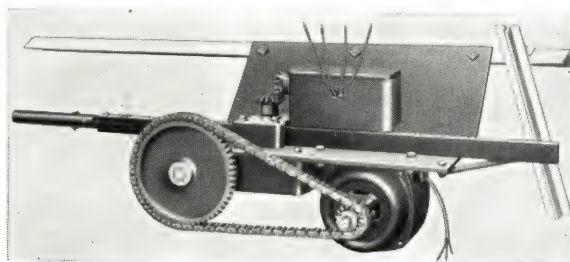
### CAMPBELL MECHANICAL OPERATORS

Mechanical Operation of Industrial Windows presents a similar problem. Campbell offers a widely diversified line of Operators, a few of which are shown on this page.

The exceptional strength and capacity of these Operators suggests the advisability of consultation with Campbell Engineers who, in nearly every instance, can insure proper operation of windows at a substantial saving.



This Tension Arm assembly is used for long runs of Continuous Windows. The attachment at the right is made to the operating shaft, the one at the left to the steel work while the upper end of the arm is attached to the sill member.



Motorized Powers are available for larger groups of operated ventilators. The one shown is designed for Tension Operators and is controlled by a switch at the floor level. Automatic, limit switch control is also available.



STANDARD DETAILS (Scale—3"=1'-0")





# CAMPBELL INDUSTRIAL DOORS

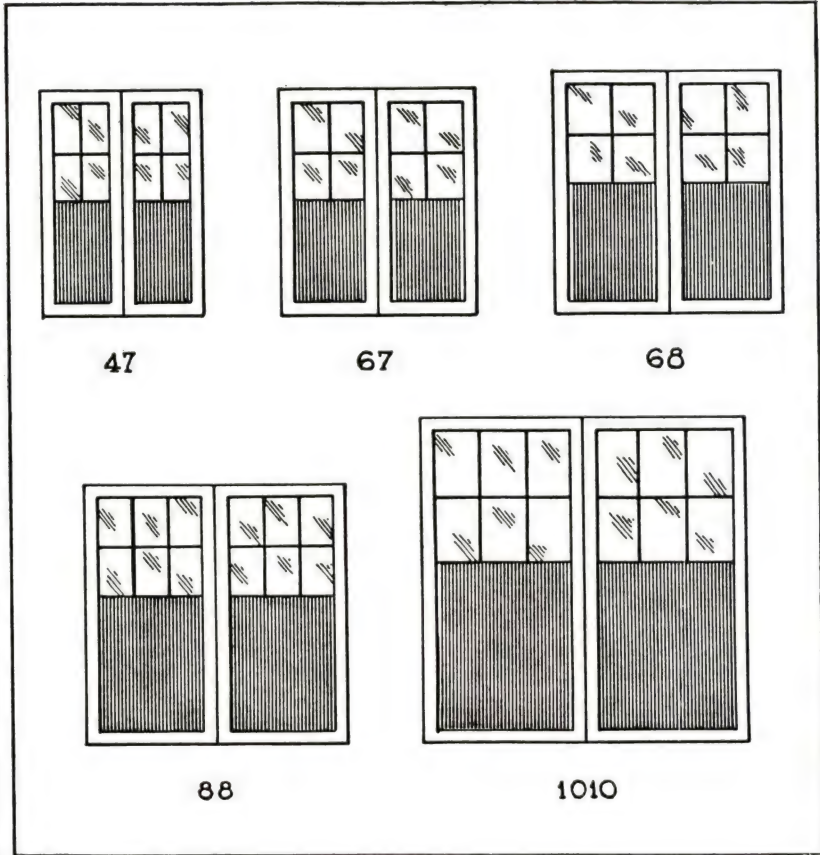
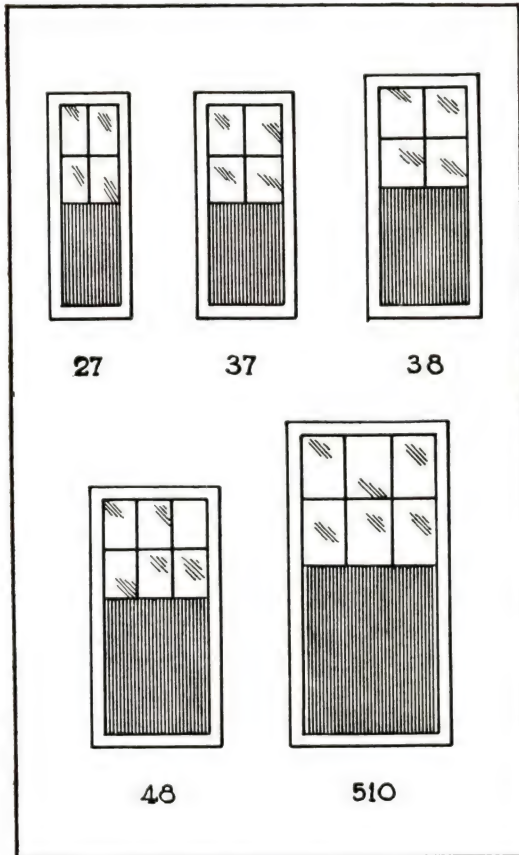
SWING

— STOCK TYPES —

SLIDE

SINGLE LEAF

DOUBLE LEAF



Campbell Industrial Doors are carried in stock in two types, Swing and Slide, and in five sizes each of single and double leaf units.

The design makes these doors exceptionally sturdy. Reinforced corners on all doors, 16 gauge metal in the tubing for stiles and rails and for the panels, all welded joints, and husky hardware contribute to long life at negligible maintenance cost.

Standard Pressed Steel Frames are supplied at extra cost.

Standard hardware is furnished with all doors and mortise cylinder locks are available at extra cost.

Construction details are shown on page 39 opposite.

## SPECIFICATIONS

SIZE—Single Openings  
Maximum Height—10'0"  
Maximum Width—5'0"

SIZE—Double Openings  
Max. Height or Width 10'0"

MATERIAL—Stiles & Rails  
4 1/2" x 1 1/2" #16 Ga. Steel  
Formed Tubing

Reinforcements in Corners  
extend 8" in Each Direction  
(See Cut)

PANELS—#16 Ga. Steel

JOINTS—All welded

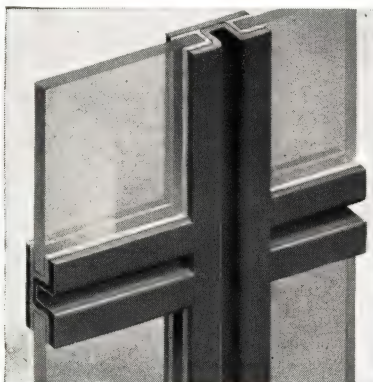
Exposed surfaces are ground  
smooth.

HARDWARE—Swing Doors  
3 Heavy Half-Surface Butt  
Hinges. Lever Latch & Pad-  
lock Brackets (Mortise Cyl-  
inder Lock may be substitut-  
ed at Extra Cost). Top &  
Bottom Bolts.

Slide Doors—Tracks,  
4 wheel, Heavy Duty,  
Double Trolleys, Guides,  
Handles, Hasp and Staple.

## STOCK SIZES

| NO.         | SIZE OF OPENING |        |            |            | GLASS |               | SIZE OF DOOR |            |
|-------------|-----------------|--------|------------|------------|-------|---------------|--------------|------------|
|             | SWING TYPE      |        | SLIDE TYPE |            | NO.   | SIZE OF       | BOTH TYPES   |            |
|             | Width           | Height | Width      | Height     | LTS.  | LIGHTS        | Width        | Height     |
| SINGLE LEAF |                 |        |            |            |       |               |              |            |
| 27          | 2'-6"           | 7'-0"  | 2'-3 1/4"  | 6'-10 1/2" | 4     | 8 1/2" x 18"  | 2'-5 3/8"    | 6'-11 1/4" |
| 37          | 3'-0"           | 7'-0"  | 2'-9 1/4"  | 6'-10 1/2" | 4     | 11 1/2" x 18" | 2'-11 5/8"   | 6'-11 1/4" |
| 38          | 3'-6"           | 7'-6"  | 3'-3 1/4"  | 7'-4 1/2"  | 4     | 14 1/2" x 18" | 3'-5 3/8"    | 7'-5 1/4"  |
| 48          | 4'-0"           | 8'-0"  | 3'-9 1/4"  | 7'-10 1/2" | 6     | 11 1/2" x 18" | 3'-11 3/8"   | 7'-11 1/4" |
| 510         | 5'-0"           | 10'-0" | 4'-9 1/4"  | 9'-10 1/2" | 6     | 15 1/2" x 22" | 4'-11 3/8"   | 9'-11 1/4" |
| DOUBLE LEAF |                 |        |            |            |       |               |              |            |
| 47          | 5'-0"           | 7'-0"  | 4'-9 1/4"  | 6'-10 1/2" | 8     | 8 1/2" x 18"  | 4'-11 3/8"   | 6'-11 1/4" |
| 67          | 6'-0"           | 7'-0"  | 5'-9 1/4"  | 6'-10 1/2" | 8     | 11 1/2" x 18" | 5'-11 3/8"   | 6'-11 1/4" |
| 68          | 7'-0"           | 7'-6"  | 6'-9 1/4"  | 7'-4 1/2"  | 8     | 14 1/2" x 18" | 6'-11 3/8"   | 7'-5 1/4"  |
| 88          | 8'-0"           | 8'-0"  | 7'-9 1/4"  | 7'-10 1/2" | 12    | 11 1/2" x 18" | 7'-11 3/8"   | 7'-11 1/4" |
| 1010        | 10'-0"          | 10'-0" | 9'-9 1/4"  | 9'-10 1/2" | 12    | 15 1/2" x 22" | 9'-11 3/8"   | 9'-11 1/4" |



Specially formed Muntin Bars give neat, trim lines

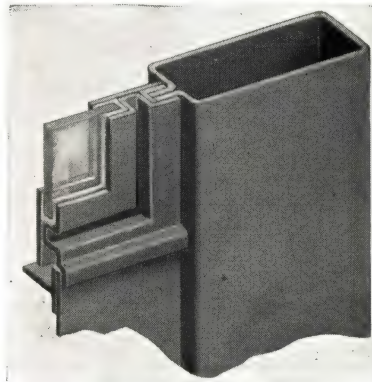
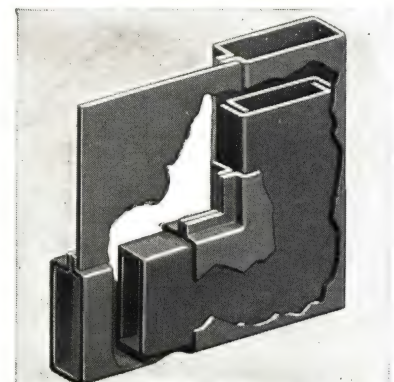


Plate Panels and Sash welded to Stile—smooth and strong



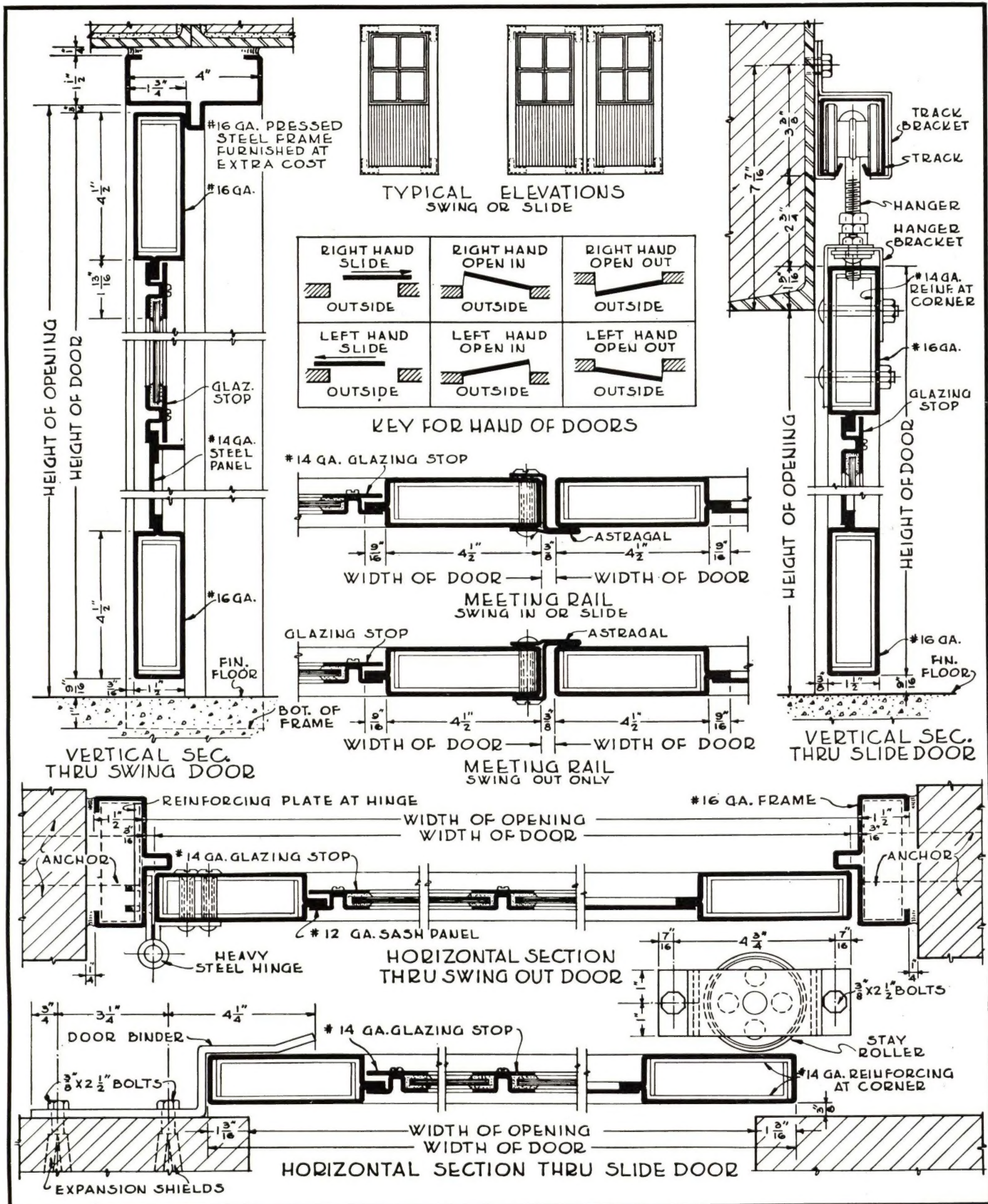
8" Corner Reinforcements in each direction



## CAMPBELL INDUSTRIAL DOORS

## SWING TYPE — DETAILS — SLIDE TYPE

SCALE OF DETAILS 3"=1'-0"





## CAMPBELL DETENTION WINDOWS

## SECURITY TYPE

For Maximum Security Specify Main Frame Sections 1 1/2" Deep.

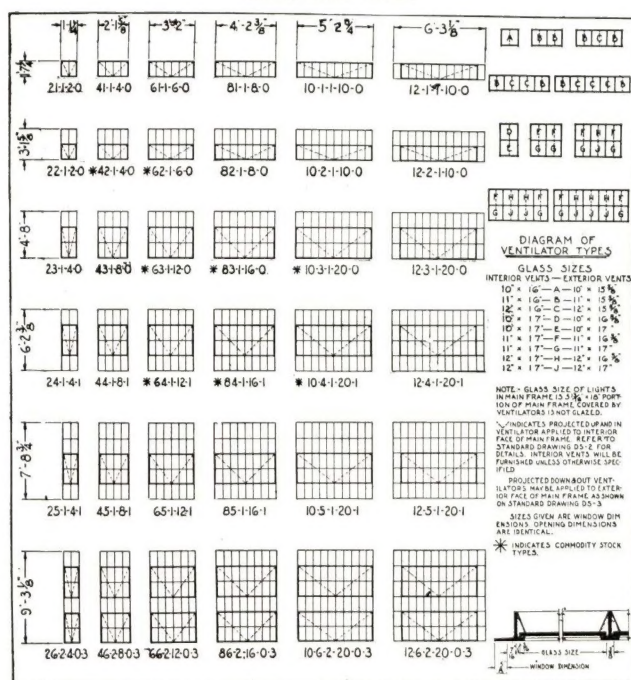
Campbell Security Type Windows offer a sturdy barrier to unauthorized entry. The extra heavy Campbell sections form a window with glass lights 5 13/16" wide by 18" high in which all muntins are coped and welded at intersections and are continuous from jamb to jamb and from head to sill.



To provide ventilation, yet retain the security feature, glass is omitted from lights in the main frame and a ventilator is applied to the unglazed portion of the window. The ventilator is glazed and is projected either up-and-in inside the frame, or down-and-out, outside the frame. The degree of opening may be limited in either case by removable stops.

Eight types of Security Windows are carried in stock as Commodity Products for immediate shipment. These types are marked with an asterisk (\*) in the plate below. Commodity Types have ventilators on the inside only.

## TYPES AND SIZES



## PROTECTION TYPE

For Maximum Protection Specify Main Frame Sections 1 1/2" Deep



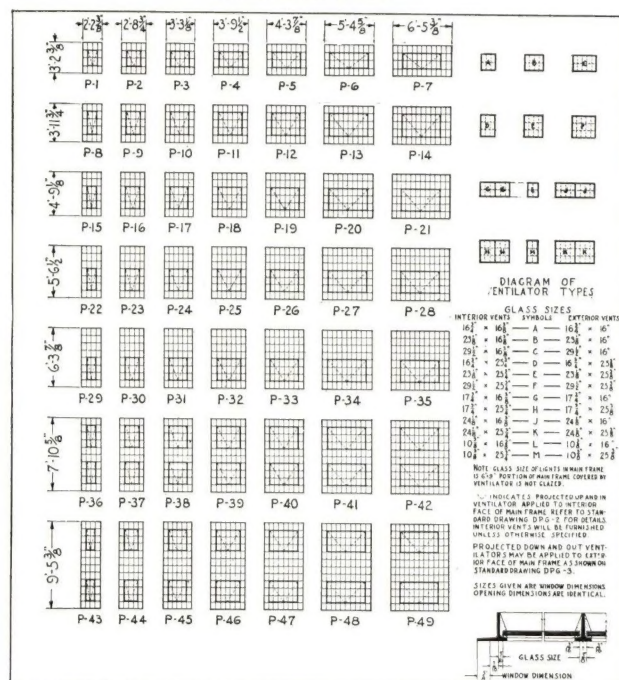
Campbell Protection Type Windows are similar in purpose, general design and construction to Security Type Windows. Additional protection is secured by decreasing the size of glass to approximately 6" x 9" lights. The greater number of muntins necessary for these small lights results in an exceptionally strong window which offers even greater protection against unauthorized entry.

Ventilators are welded to the unglazed portions of the frames and are projected up-and-in when attached to the interior, down-and-out when attached to the exterior. Interior, up-and-in vents will be furnished unless otherwise specified.

Removable stops are furnished which limit the opening of all vents.

Campbell Protection Windows conform to the Treasury Department Regulations for the windows in U. S. Government Bonded Warehouses. They are therefore used to a considerable extent by distilleries and afford the necessary protection at a cost much less than that of other adequate means.

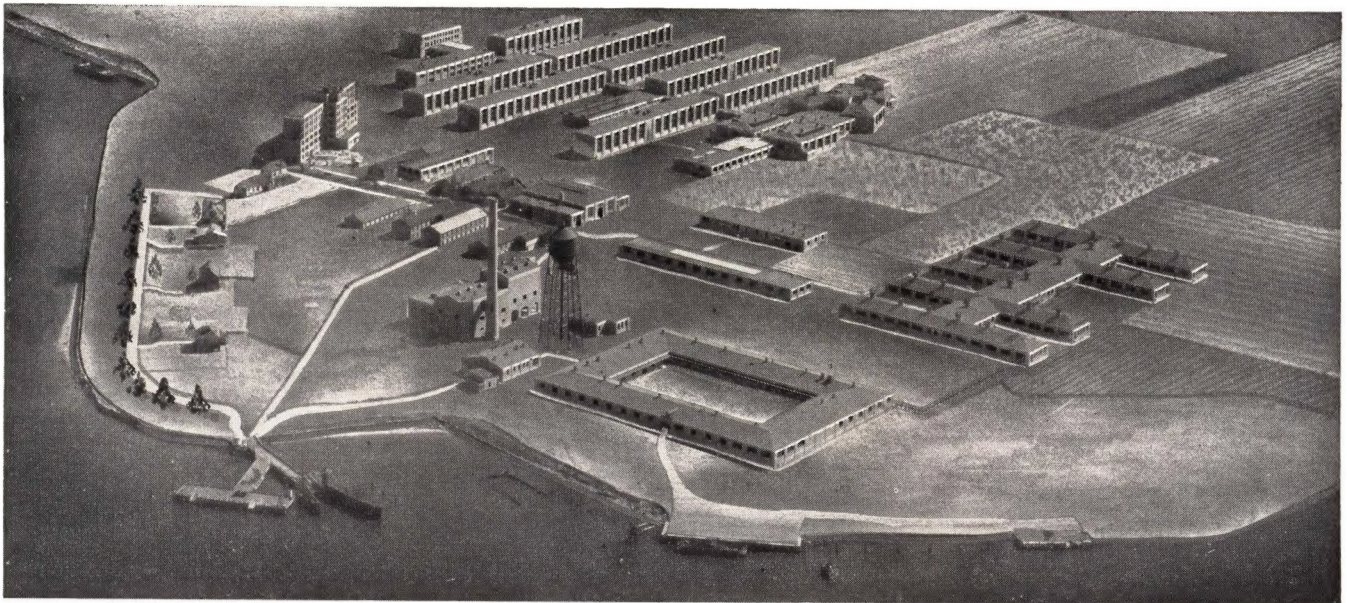
## TYPES AND SIZES





# CAMPBELL DETENTION WINDOWS

## INTERMEDIATE GUARD TYPE      SUPERBAR GUARD TYPE



Rikers Island (N. Y.) Penitentiary. Sloan and Robertson, Architects. The Builders, P. J. Carlin Construction Company.  
3055 Campbell Detention Windows

Campbell Detention Windows incorporate two features essential to modern penology—a maximum of light and an abundance of ventilation—both of which have been secured while actually lessening the opportunity to escape.

Campbell sections, because of their extra weight, are particularly well suited to use in detention windows.

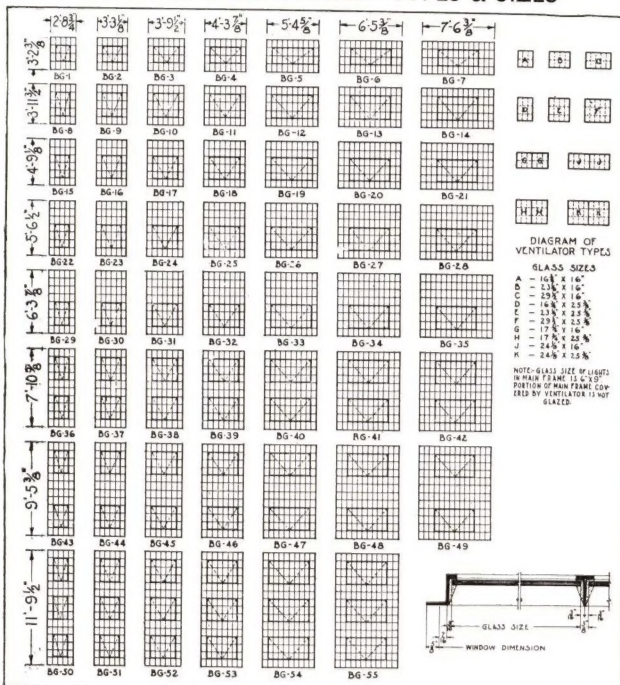
The Intermediate Guard Type windows are glazed from the exterior and the whole frame is made a sturdy unit by welding all corners

These windows have been used in many outstanding penal institutions among which are Rikers Island, (N. Y.) Penitentiary (pictured above) Sing Sing (N. Y.) Prison, Fort Worth (Texas) Narcotic Farm, Attica (N. Y.) State Prison, Harrisburg (Pa.) Insane Hospital, Randolph County (Ala.) Jail, Auburn (N. Y.) State Prison, Illinois State Penitentiary (Menard, Ill.), Dixon (Ill.) State Hospital, El Reno (Okla.) Reformatory, Sandstone (Minn.) Federal Jail, Tallahassee (Fla.) Federal Jail, Hillsville (Va.) Jail and many others.

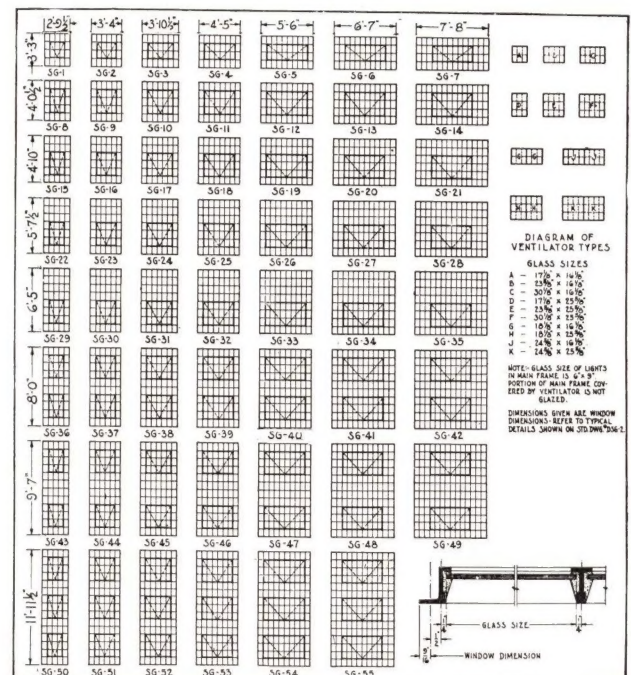
and all joints. Ventilators, securely welded to the interior of the main frame, may be either projected up-and-in or bottom hinged. All exposed screws are interrupted slot head detention type except in the case of hardware attachment where the screws are pinned over.

The Super-Bar Guard Type is made from even heavier sections with a modified bulb tee muntin member which effectively resists hand sawing and provides for putty retention. Frame members are Zee sections with additional metal on the interior surface to conform to the muntin contour.

### INTERMEDIATE GUARD—TYPES & SIZES



### SUPERBAR GUARD—TYPES & SIZES





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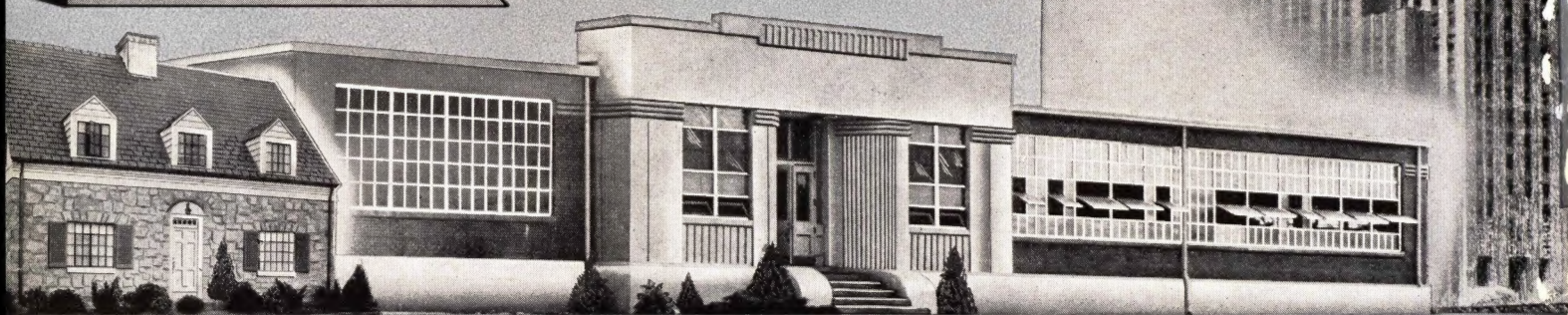
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# CAMPBELL METAL WINDOWS



## CAMPBELL METAL WINDOW CORP.

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

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